Supreme Court, U.S.
FILED
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No. _____

In The Supreme Court of the United States

CHIRON CORPORATION,

Petitioner,

v.

GENENTECH, INC.

On Petition For A Writ Of Certiorari To The United States Court Of Appeals For The Federal Circuit

PETITION FOR A WRIT OF CERTIORARI

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QUESTIONS PRESENTED

Section 112 of Title 35 of the United States Code provides, in relevant part, that the specification in a patent "shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same." The questions presented are:

1. Whether Section 112 contains a separate "written description" requirement that can invalidate a patent even when the patent specification contains a written description that enables a person skilled in the art to make and use the claimed invention as required by Section 112.

2. Assuming that there is a written description requirement in Section 112 apart from enablement, whether a patent that enables a person skilled in the art to make and use the patented invention can be invalidated because the patent specification did not predict certain uses based on technologies that came into existence after the inventor filed the patent application with the United States Patent and Trademark Office.

3. Whether a jury's general verdict finding a patent invalid may be upheld if there is insufficient evidence as a matter of law to support one of the two legal theories submitted to the jury upon which the jury may have relied.

RULE 29.6 CORPORATE DISCLOSURE STATEMENT

Petitioner Chiron Corporation has no parent corporation. Novartis A.G. and Citigroup Inc. are both publicly held companies that each own 10% or more of Chiron Corporation's stock.

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OPINIONS BELOW

The opinion of the Federal Circuit (App., *infra*, 1a-31a) is reported at 363 F.3d 1247. The relevant opinions of the district court granting petitioner's motion for partial summary judgment on the issue of patent infringement (App., *infra*, 61a-72a), and denying petitioner's motions for judgment as a matter of law (App., *infra*, 53a-60a) and for renewed judgment as a matter of law (App., *infra*, 32a-52a) are unreported.

JURISDICTION

The court of appeals entered its judgment on March 30, 2004. A petition for rehearing and rehearing *en banc* was denied on June 8, 2004. The Chief Justice, on August 27, 2004, granted an extension of time for filing a petition for *certiorari* to and including October 6, 2004. This Court's jurisdiction is invoked under 28 U.S.C. § 1254(1).

STATUTORY PROVISIONS INVOLVED

Paragraphs 1 and 2 of Section 112 of Title 35 of the United States Code provide, in relevant part:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.
>
> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

35 U.S.C. § 112 ¶¶ 1 & 2.

Article I, Section 8, Clause 8 of the United States Constitution and Sections 101, 120, and 282 of the Patent

Act are reproduced in relevant part in the appendix to this brief. App., *infra*, 75a-77a.

STATEMENT OF THE CASE

This case involves the validity of petitioner's patent for its discovery of the first antibody target used for diagnosing and treating certain forms of breast cancer.

1. Statutory Framework

The United States Patent and Trademark Office (PTO) is authorized by Congress to grant a patent to anyone who "invents or discovers any new and useful process, machine, manufacture, or composition of matter, or * * * improvement thereof." 35 U.S.C. § 101. A patent grants the inventor "the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States" for a limited period, currently set at 20 years from the time of the application. 35 U.S.C. § 154.

So long as an inventor's patent application is still pending before the PTO, the inventor may submit a later application, known as a "continuation-in-part" application, and may obtain "priority" to the earlier application for the inventions claimed, meaning that the claims in the later-filed application "shall have the same effect, as to such invention, as though filed on the date of the prior application." 35 U.S.C. § 120; *see* 37 C.F.R. § 1.53(b)(2). But, in order for the claims in the later application to obtain "priority" back to the filing date of the earlier application, the claimed invention in the later application must have been disclosed by the earlier application "in the manner provided by the first paragraph of Section 112" of Title 35 of the United States Code. 35 U.S.C. § 120.

The first paragraph of Section 112 provides that a patent specification filed by an inventor must "contain a written description of the invention, and the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art

to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention." 35 U.S.C. § 112 ¶ 1.

Patents granted by the PTO "shall be presumed valid." 35 U.S.C. § 282. In a suit alleging patent infringement, however, an alleged infringer may avoid liability by overcoming this presumption and establishing that the patent is invalid. *Ibid.* One ground on which to challenge the validity of a patent is that the invention was not "novel" at the time the application was filed, *e.g.*, "the invention was patented or described in a printed publication * * * or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States." 35 U.S.C. § 102(b); *see id.* § 282(2) (non-compliance with the requirements of Section 102 is a defense to claim of infringement). Therefore, the filing date or priority of an inventor's patent application can be determinative of the patent's validity.

2. Factual Background

a. Petitioner's U.S. Patent No. 6,054,561 ('561 patent) claims monoclonal antibodies that bind to an antibody target it discovered that is associated with breast cancer cells in humans. App., *infra*, 2a-3a.

Antibodies are generated by the immune system and can bind to specific targets, called antigens. *Id.* at 3a. Monoclonal antibodies are man-made compositions of homogenous antibodies made from a single (*i.e.* "mono") clone of a cell that makes a single antibody. This means that substantially all the antibodies in the composition bind to the same antigen. *Id.* at 3a-5a, 61a-62a. If the antigen target of the monoclonal antibody is found selectively on breast cancer cells, such an antibody is useful for therapy and diagnosis of breast cancer. The scientific work of petitioner (and one of its corporate predecessors) led to the discovery of a number of such monoclonal antibodies that bind to a particular antigen, now called HER2, which

is present in cancerous cells in approximately 30 percent of breast cancer patients. *Id.* at 3a, 5a, 62a; C.A. J.A. A2785.

b. Petitioner filed a series of patent applications based on this discovery. Petitioner filed its initial application with the PTO on February 8, 1984, disclosing one example of a monoclonal antibody that binds to HER2. App., *infra*, 5a. That monoclonal antibody was a murine antibody (*i.e.*, derived from mouse cells) produced by the hybridoma method. *Id.* at 4a-5a.[1]

On January 11, 1985, petitioner filed a continuation-in-part application, which disclosed six additional examples of monoclonal antibodies that bind to HER2 that were also murine antibodies produced by the hybridoma method. *Id.* at 6a. On May 21, 1986, petitioner filed a second continuation-in-part application, which disclosed another six additional examples of monoclonal antibodies that bind to HER2 that were also murine antibodies produced through hybridoma technology. The 1985 and 1986 applications specified that the term "monoclonal antibody" means a homogeneous population of antibodies and "is not intended to be limited as regards the source of the antibody or the manner in which it is made." *Id.* at 6a-7a.

A third continuation-in-part application was filed on June 7, 1995, containing the same definition of "monoclonal antibody" and adding to the specification a list of examples of antibodies, including "chimeric" antibodies (derived from cells of more than one species) and "humanized" antibodies (derived from mouse cells with regard to the binding portions of the antibody and derived from human cells as to the remaining portions). *Id.* at 5a, 67a. The target antigen petitioner discovered can be bound by any of these kinds of monoclonal antibodies.

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[1] The hybridoma method fuses a single antibody-producing cell to a cancerous cell to produce a population of identical antibody-producing cells in culture. App., *infra*, 3a-4a.

The PTO granted petitioner's application and issued the '561 patent on April 25, 2000. *Id.* at 62a. In doing so, the PTO concluded that the patent claims are entitled to priority back to the filing of the 1984 application. C.A. J.A. A2671.

c. Herceptin, a breast cancer therapeutic drug made by respondent, is a monoclonal antibody that binds to the HER2 antigen, and has been "humanized" to minimize adverse responses by the body's immune system when the antibody is administered. Humanization makes Herceptin appear to a human's immune system to be as much like a human antibody as possible, although its binding capacity is derived from a mouse antibody. App., *infra*, 4a-5a, 7a, 64a, 72a. Humanization does not change or improve upon the HER2 target antigen discovered by petitioner.

3. Procedural Background

a. In June 2000, petitioner brought the instant action in the United States District Court for the Eastern District of California, alleging that respondent infringed the '561 patent by its sales of Herceptin. Respondent had not obtained a license from petitioner for its use of petitioner's patented discovery in its manufacture of Herceptin.

The district court was required, as a pretrial threshold matter, to construe the claims of the '561 patent. *See Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 389 (1996) (court responsible for interpreting patent). The court held that petitioner's patent claims embrace monoclonal antibodies that bind to HER2 regardless of the manner in which they were made. App., *infra*, 67a.[2] The court held that the patent does not distinguish among

[2] The district court held that "the meaning of 'monoclonal antibody' has not changed" from the time of petitioner's first application in 1984 to the time of the litigation and thus when used in petitioner's 1984 application it was "understood" to have the same meaning as it did in the later applications. 266 F. Supp. 2d 1172, 1190, 1191 n.18 (E.D. Ca. 2002).

kinds of monoclonal antibodies according to how they were produced and thus embraces murine antibodies, chimeric antibodies, and humanized antibodies. *Ibid.* The district court also entered a pretrial order granting petitioner's motion for partial summary judgment on infringement. The court concluded that, if petitioner's '561 patent were valid, respondent had infringed the claims of the patent. *Id.* at 7a, 72a.

As another pretrial matter, the parties stipulated that the '561 patent claims would be invalid if they were not entitled to priority to the filing date of either the 1984, 1985, or 1986 applications. *Id.* at 7a. The patent could not rely on the 1995 application date because petitioner had already published its invention to the public by that point and thus could not meet the novelty requirement for patentability in Section 102. The parties further stipulated that if the patent were entitled to the priority date of the 1984, 1985, or 1986 applications, the patent "is valid as not anticipated by intervening prior art pursuant to 35 U.S.C. § 102." C.A. J.A. A3457. The parties agreed that, in order to obtain the needed priority, either the 1984, 1985, or 1986 applications had to comply with the first paragraph of Section 112. *See* App., *infra*, 7a-8a; C.A. J.A. A1.

At the close of the evidence at trial, the district court denied petitioner's motion for judgment as a matter of law. In particular, the court, relying on Federal Circuit precedent, rejected "Chiron's argument that, as a matter of law, there is no statutory written description requirement under Section 112" separate from enablement. App., *infra*, 59a (citing *Enzo Biochem, Inc. v. Gen-Probe, Inc.*, 323 F.3d 956 (Fed. Cir. 2002)).

The jury found in a general verdict that the 1984, 1985, and 1986 applications failed to satisfy either the written description or enablement requirements. *Id.* at 7a-8a. The district court subsequently denied petitioner's renewed motion for judgment as a matter of law that incorporated petitioner's earlier argument that there was no separate written description requirement distinct from enablement in Section 112. *Id.* at 59a, 32a.

The district court also declined to overturn the jury's general verdict that the 1984 application did not satisfy either the written description requirement or the enablement requirement. As to written description, the district court ruled that "there was sufficient evidence to find that at least chimeric antibodies were known during the 1984-1986 time period," and were not adequately described in the patent specification. *Id.* at 56a-59a. As to enablement, the district court found that there was substantial evidence that chimeric antibodies were known at the time of the 1984 application, and were not properly enabled. *Id.* at 55a-56a.[3]

b. The United States Court of Appeals for the Federal Circuit affirmed. App., *infra*, 1a-31a. As it had in the district court, petitioner contended that "there is no separate written description requirement for new claims under Section 112 ¶ 1." Pet. C.A. Br. 22 n.2. The court of appeals, however, bound by circuit precedent, rejected the argument, noting that it previously had "interpreted this passage [in Section 112] as setting forth two requirements: written description and enablement." App., *infra*, at 9a (citing *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1330 (Fed. Cir. 2003)).

The court of appeals accepted the district court's construction of the '561 patent to include all monoclonal antibodies that bind to HER2, including humanized antibodies such as respondent's Herceptin. App., *infra*, 11a. With regard to the validity of petitioner's patent, the court of appeals reversed the district court's ruling that respondent had demonstrated that petitioner's 1984 application failed to meet the enablement requirement of Section 112. The Federal Circuit held that petitioner's 1984 application did meet the enablement requirement because "the enablement requirement does not extend to technology that arises after the time of filing." App., *infra*,

[3] For the 1985 and 1986 applications, the district court sustained the jury's verdict on both written description and enablement grounds. App., *infra*, 35a-39a.

12a-13a. The court of appeals therefore ruled that "the district court erred to the extent that it attempted to create an obligation for Chiron scientists to enable non-existent [chimeric] technology in the 1984 filing." *Id.* at 12a-13a.[4]

The court of appeals nonetheless held that the 1984 application "does not satisfy the written description requirement" of Section 112 because, the court reasoned, the application should have described chimeric antibody technology even though that technology "did not even exist at the time of the 1984 filing." *Id.* at 13a.

The jury's general verdict had concluded that the 1984 patent application was invalid because it failed "to meet EITHER the written description OR enablement requirements" of Section 112. C.A. J.A A1 (emphasis in original). The court of appeals affirmed the verdict even though it had reversed the 1984 enablement ruling, and recognized that the jury "may have" relied on an erroneous finding regarding enablement as the only legal basis for its conclusion that the 1984 application failed to meet the Section 112 requirements. App., *infra*, 13a. The court did not address petitioner's argument that the verdict could be affirmed only if both of the legal theories presented to the jury were supported by sufficient evidence. *See* Pet. C.A. Br. 52; Pet. C.A. Reply Br. 23-24.

In a concurring opinion, Judge Bryson disagreed with the majority's holding that the 1984 application met the enablement requirement. He would have held that the application needed to enable chimeric monoclonal antibodies encompassed by the '561 claim. App., *infra*, 27a-31a.

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[4] The court of appeals held that respondent had shown that the 1985 and 1986 applications failed the enablement requirement because, by the time they were filed, the creation of chimeric antibodies was a nascent technology and petitioner failed to disclose how to make and use chimeric antibodies. App., *infra*, 14a-17a. The court of appeals did not address whether the 1985 and 1986 applications met that court's separate written description requirement.

c. Petitioner filed a petition for rehearing and rehearing *en banc* in which it argued, *inter alia*, that Section 112 contains no separate written description requirement apart from enablement. Petitioner brought to the court of appeals' attention another petition for rehearing and rehearing *en banc* that was then pending before that court in *University of Rochester v. G.D. Searle & Co.*, raising the same argument. *See* Pet. for Reh'g or Reh'g *En Banc* at 13. The court of appeals denied the petition. App., *infra*, 73a-74a.

REASONS FOR GRANTING THE PETITION

When it made Herceptin, respondent infringed petitioner's '561 patent by using, without petitioner's authorization, petitioner's patented discovery of targeting the HER2 antigen using monoclonal antibodies. To "humanize" such antibodies, respondent used ancillary methods patented by a third party, for which respondent obtained a license from that third-party patentee.[5] Respondent then sought and obtained its own patent for the particular combination of the two technologies that is found in Herceptin. *See* U.S. Patent No. 6,054,297 (one of respondent's patents for humanized antibodies that bind to HER2 and methods for making them).

Petitioner does not challenge respondent's patent on Herceptin. Petitioner maintains, however, that respondent was required to obtain authorization from petitioner before using petitioner's patented discovery in respondent's production of Herceptin and, because respondent failed to do so, respondent infringed the '561 patent.

When petitioner brought this patent infringement suit against respondent, the lower courts held petitioner's patent invalid. That ruling was based on three significant legal errors meriting review, two of which involve matters

[5] *See* http://www.pdl.com/index.cfm?navid=132 (identifying respondent as the recipient of a license to humanization patents for use in making Herceptin).

of great importance to patent law and the inventing community, and a third that defies this Court's settled principles involving general jury verdicts.

I. The Federal Circuit held that the specification in petitioner's 1984 patent application fails to meet the requirements of the first paragraph of 35 U.S.C. § 112, even though it meets the textual requirement for a written description sufficient to enable a skilled practitioner to make and use the invention as set forth in the statute. The court held that the specification fails a separate written description requirement in Section 112, apart from enablement, that is mandated under Federal Circuit precedent.

Members of the Federal Circuit strongly disagree on the question whether such a separate written description requirement exists in Section 112. Most recently, that court denied rehearing *en banc* in another case raising the issue, with five of the twelve active judges voting for rehearing on the issue. *See University of Rochester v. G.D. Searle & Co.*, 375 F.3d 1303, 1307 n.1 (Fed. Cir. 2004). A petition for a writ of *certiorari* to review that ruling is currently pending before this Court in No. 04-___ (filed Sept. 30, 2004). If the Court grants *certiorari* on the issue in *University of Rochester*, the petition in this case should be held pending the resolution of that case. If the Court then reverses the judgment in *University of Rochester*, *certiorari* should be granted on the issue in the instant case, the judgment vacated, and the case remanded for further proceedings. If the Court denies *certiorari* in *University of Rochester*, it could grant review of the issue in this case or, if the Court grants review in that case but ultimately rules that there is a separate written description requirement in Section 112 apart from enablement, then the Court should grant *certiorari* on the second question presented in this case, which involves the interpretation of that requirement.

II. The court of appeals held that petitioner's 1984 patent specification failed to meet the Federal Circuit's separate written description requirement because it failed

to describe unknown future embodiments of the invention. Even if there were a written description requirement in Section 112 distinct from enablement, it could not possibly include such a duty. By holding that a patent can be invalidated by the appearance of later improvements to the invention, the Federal Circuit turned its back on more than 100 years of settled law that a subsequent improvement does not invalidate the original patent. *See Cantrell v. Wallick*, 117 U.S. 689, 694 (1886). That holding should not be allowed to stand.

III. The court of appeals upheld the jury's general verdict that the 1984 patent application failed to comply with Section 112's requirements even though the court determined that the jury, as a matter of law, could not have found for respondent on one of the two alternative legal theories with which it was charged and that the jury "may have" relied on the other legal ground. App., *infra*, 13a. This holding is contrary to this Court's settled precedent on the review of general verdicts, *see, e.g.*, *Maryland v. Baldwin*, 112 U.S. 490, 493 (1884); *City of Columbia v. Omni Outdoor Adver., Inc.*, 499 U.S. 365, 384 (1991), and continues the split among the lower courts on the question. This same issue is presented for the Court's review as the second question presented in *Union Pacific Railroad Co. v. Barber*, No. 04-47 (docketed July 7, 2004). If the Court grants *certiorari* on that question in *Union Pacific*, the petition in this case should be held pending the resolution of that case and disposed of accordingly. Otherwise, the Court should grant *certiorari* on this question to resolve the disagreement in the Circuits and bring the decision below in line with this Court's precedent.

I. The Judges Of The Federal Circuit Are In Disagreement On Whether A Written Description Requirement Exists Separate From Enablement In 35 U.S.C. § 112

Review by this Court is necessary to resolve the ongoing dispute in the Federal Circuit regarding the existence of a written description requirement in 35 U.S.C.

§ 112 separate from the enablement requirement. The issue is dispositive with respect to the court of appeals' decision invalidating petitioner's patent in this case.

The court of appeals found that petitioner's 1984 application met Section 112's textual requirement for a written description sufficient to enable a person skilled in the art to make and use the invention, but it found that the 1984 application did not meet the Federal Circuit's separate written description requirement. App., *infra*, 12a-14a. Therefore, if this Court were to interpret Section 112 according to its text and not to support a separate written description requirement, the court of appeals' decision to affirm the jury's verdict on the ground that it may have found that the 1984 application failed to meet the written description requirement of Section 112 would have to be reversed. Accordingly, pursuant to the parties' stipulation, judgment would be entered in petitioner's favor.[6]

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[6] Some members of the Federal Circuit have suggested that Section 112 may impose a separate written description requirement when assessing whether an earlier application complies with Section 112 so that claims in a subsequent application would be entitled to the earlier application's priority under Section 120, but not when determining only whether a patent complies with Section 112. *See Enzo Biochem, Inc. v. Gen-Probe Inc.*, 323 F.3d 956, 988 (Fed. Cir. 2002) (Linn, J., dissenting from denial of rehearing *en banc*). That distinction has no foundation in the text of Section 112. *See Moba v. Diamond Automation*, 325 F.3d 1306, 1327 (Fed. Cir. 2003) (Bryson, J., concurring) ("[I]t is difficult to find a principled basis for restricting that requirement to cases involving priority disputes. There is no language in section 112 that would support such a restriction, and I am unaware of any other basis for construing the statute in that fashion * * * ."), *cert. denied*, 124 S. Ct. 464 (2003).

Of course, Section 112, as incorporated by Section 120, will maintain a role in ensuring that an earlier priority date is not improperly attained, even without the separate written description requirement, through its requirement that a prior application contain a "written description" that "enable[s]" a person skilled in the art to make and use the invention claimed in the subsequent application. That was the enablement inquiry the panel below answered in petitioner's favor as a matter of law for the 1984 application. App., *infra*, 12a-13a. Congress's determination that earlier patent applications that provide a

(Continued on following page)

As noted above, this dispositive question is presented in the petition for *certiorari* currently pending in *University of Rochester v. G.D. Searle & Co.*, No. 04-___. If the Court grants *certiorari* in *University of Rochester* and reverses the Federal Circuit's judgment, *certiorari* should be granted in the instant case, the judgment vacated, and the case remanded for further proceedings. Otherwise, the Court should grant *certiorari* in the instant case to address whether there is a separate written description requirement and, if so, the proper interpretation of that purported requirement.

A. The Federal Circuit Has Declined To Resolve *En Banc* A Longstanding Division On Its Separate Written Description Requirement, Necessitating This Court's Review

1. The judges of the Federal Circuit are in open disagreement over whether the first paragraph of Section 112 imposes a written description requirement that is separate from the enablement requirement and, if such a separate requirement exists, what it is. The Federal Circuit has refused to resolve the disagreement. A recent petition for rehearing *en banc* failed, 7 to 5, with 4 of the 5 dissenting judges joining vociferous dissents calling attention to the wide divergence of views within the Circuit on the meaning of Section 112. *See University of Rochester*, 375 F.3d at 1307 n.1 (identifying the vote total); *id.* at 1304 (Newman, J., dissenting from denial of rehearing *en banc*); *id.* at 1307 (Rader, J., dissenting from denial of rehearing *en banc*, joined by Gajarsa and Linn, JJ.); *id.* at 1325 (Linn, J., dissenting from denial of rehearing *en banc*, joined by Rader, and Gajarsa, JJ.). One of the judges who believes that there is a separate written description

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description of the invention sufficient to enable it are to be treated "as though filed on the date of the prior application," 35 U.S.C. § 120, should not be frustrated by a more demanding judicially-created description requirement.

requirement in Section 112 emphasized that she was voting to grant rehearing *en banc* in *University of Rochester* because "the burgeoning conflict in pronouncements of this court concerning the written description and enablement requirements of the Patent Act" reflects "a fundamental conflict concerning patent scope and the support needed to claim biological products." *Id.* at 1304 (Newman, J.).

2. The Federal Circuit's predecessor, the Court of Customs and Patent Appeals, first created a separate written description requirement in *In re Ruschig*, 379 F.2d 990 (C.C.P.A. 1967). The separate written description requirement has been applied by later panels not because they necessarily agreed that the requirement has a statutory basis but, at least for some, apparently only because panels of the Federal Circuit are bound to follow *Ruschig*. *See, e.g., Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563-1564 (Fed. Cir. 1991).

In 1997, a panel of the Federal Circuit announced a new stricter application of its separate written description requirement to patents claiming biological materials. *See Regents of the Univ. of Cal. v. Eli Lilly & Co.*, 119 F.3d 1559 (Fed. Cir. 1997), *cert. denied*, 523 U.S. 1089 (1998). *Eli Lilly* held that, to satisfy the separate written description requirement of Section 112, a patent claiming a DNA molecule must include an enumeration of the "precise definition of a DNA sequence in the patent specification." *Moba v. Diamond Automation*, 325 F.3d 1306, 1320 (Fed. Cir.) (describing holding of *Eli Lilly*), *cert. denied*, 124 S. Ct. 464 (2003). The Federal Circuit thus entered a new period of "appl[ying] rigorously" the separate written description requirement to invalidate patents. *Enzo Biochem, Inc. v. Gen-Probe, Inc.*, 323 F.3d 956, 972 (Fed. Cir. 2002) (Lourie, J., joined by Newman, J., concurring in the denial of rehearing *en banc*).

Subsequent to *Eli Lilly*, the Federal Circuit declined in *Enzo* to grant rehearing *en banc* to resolve the threshold question regarding the disagreement among the members of the court on the existence of the "separate written

description" requirement. *See id.* at 976 (Rader, J., dissenting from denial of rehearing *en banc*). The panel opinion in *Enzo* had held that the deposit of a biological compound was inadequate to meet the separate written description requirement. *See* 285 F.3d 1013, 1023-1024 (Fed. Cir. 2002). The United States, as *amicus curiae*, supported rehearing *en banc,* emphasizing that "[r]ehearing *en banc* would provide a useful opportunity for the Court to give plenary consideration to the meaning of the written description provision." Brief of United States as *Amicus Curiae* Supp. Reh'g *En Banc*, No. 01-1230, *Enzo Biochem, Inc. v. Gen-Probe Inc.* at 4-5 (2002). The panel ultimately reversed itself on rehearing on the deposit issue, and rehearing *en banc* was denied. *Enzo*, 323 F.3d at 970.

A panel of the Federal Circuit suggested in *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1332 (Fed. Cir. 2003), that the more demanding written description requirement of *Eli Lilly* was limited to "new or unknown biological materials." In *University of Rochester*, however, a panel of the Federal Circuit again expanded the scope of the separate written description requirement by rejecting the argument that *Eli Lilly* was limited to biotechnology patents. *University of Rochester* concluded that "the statute applies to all types of inventions. We see no reason for the rule to be any different when non-genetic materials are at issue." 358 F.3d 916, 925 (Fed. Cir. 2004).

When the court denied *en banc* review again in *University of Rochester*, the dissenters included two of the panel members who decided the governing *Eli Lilly* precedent, which had expanded the written description requirement. *See University of Rochester*, 375 F.3d at 1307 n.1. One of those dissenters had earlier suggested that "[p]erhaps the entire line of cases stemming from *Ruschig* is wrong, and perhaps we should at some point address" *en banc* whether those cases, including *Eli Lilly*, are "based on a fundamentally flawed construction of 35 U.S.C. § 112, paragraph 1." *Moba*, 325 F.3d at 1328 (Bryson, J., concurring). The Federal Circuit has consistently refused to confront this fundamental question.

3. The uncertainty caused by the Federal Circuit's atextual interpretation of Section 112 has nationwide consequences that threaten the reasonable expectations of inventors across industries. All district courts are bound by the Federal Circuit's interpretations of Section 112, as is the PTO. *See* 28 U.S.C. § 1295; *Ex parte Holt*, 19 U.S.P.Q.2d 1211 (B.P.A.I. 1991).

Members of the Federal Circuit have conceded that the Circuit's separate written description requirement has been inconsistently applied. Judge Linn has lamented the "confusion our precedent in *Lilly* and *Enzo* has engendered in establishing 'written description' as a separate requirement of 35 U.S.C. § 112, paragraph 1." *University of Rochester*, 375 F.3d at 1325 (Linn, J., dissenting from denial of rehearing *en banc*); *see also id.* at 1308 (Rader, J., dissenting from denial of rehearing *en banc*) ("this new judge-made doctrine has created enormous confusion"). Judge Dyk, concurring in the denial of rehearing *en banc* in *University of Rochester*, acknowledges that "we have yet to articulate satisfactory standards" for the separate written description requirement. *Id.* at 1327.

Similarly, the United States as *amicus curiae* urging rehearing *en banc* in *Enzo* concluded that, although the Federal Circuit has "addressed the 'written description' requirement of Section 112 on a number of occasions, its decisions have not taken a clear and uniform position regarding the purpose and meaning of the requirement." Brief of United States as *Amicus Curiae*, *supra*, at 4. Indeed, it emphasized that "[d]espite the many efforts of panels of [the Federal Circuit] and the extensive efforts of the USPTO, the opinions in [*Enzo*] reflect continuing uncertainty over the proper test for an adequate written description." *Id.* at 9.

Because of the "continuing debate in [Federal Circuit] panel opinions applying divergent law," *University of Rochester*, 375 F.3d at 1304 (Newman, J., dissenting from denial of rehearing *en banc*), PTO examiners and the administrative appeals board are compelled to make patent decisions without clear guidance about what

description may survive Federal Circuit scrutiny. And patent holders have no way to amend their patents to keep up with the changing demands of the Federal Circuit. "Without any way to redraft issued patents to accommodate the new rule [articulated in *Lilly*], a large number of patents in the field of biotechnology face serious and unavoidable validity challenges." *Moba*, 325 F.3d at 1325 (Rader, J., concurring). Long delays in the PTO and the courts heighten the problem because a patent may be judged against judicially-created standards announced a decade or more after the patent application was filed. *See, e.g., Enzo Biochem, Inc. v. Calgene, Inc.*, 188 F.3d 1362 (Fed. Cir. 1999) (invalidating patents for technology regulating genes on applications filed in 1983); *Geneva Pharms., Inc. v. GlaxoSmithKline PLC*, 349 F.3d 1373 (Fed. Cir. 2003) (invalidating patents for antibiotics on applications filed in 1975).

Incentives for innovation and for the significant financial investments required to bring the inventions to consumers are severely disrupted by this uncertainty. As this Court has admonished, "[t]o change * * * substantially the rules of the game" undermines expectations of persons holding "numerous patents which have not yet expired and which would be affected by [the] decision." *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 32 n.6 (1997).

Because the Federal Circuit has declined to provide the clarification needed, review by this Court is warranted to resolve this conflict. As one of the dissenters in the *University of Rochester* case explained, "[t]he issue of whether patent law contains a separate written description requirement has percolated through various panels of [the Federal Circuit] on a variety of facts. * * * This question has percolated enough." 375 F.3d at 1305 (Newman, J., dissenting from denial of rehearing *en banc*).

B. The Judicially-Created Separate Written Description Requirement Is Contrary To The Text, Structure, And Purposes Of The Patent Act

1. The Federal Circuit's current construction of Section 112 is not supported by the text of the Patent Act. Section 112 requires "in a single prepositional phrase, that the description of the invention, and the description of the manner of making and using it, shall both be in 'such full, clear, concise, and exact terms to enable' " a person skilled in the art to make and use the invention. *In re Barker*, 559 F.2d 588, 594 (C.C.P.A. 1977) (Markey, J., dissenting), *cert. denied*, 434 U.S. 1064 (1978). Accordingly, "the measure of the sufficiency of that written description in meeting the conditions of patentability in paragraph 1 of [Section 112] depends solely on whether it enables any person skilled in the art to which the invention pertains to make and use the claimed invention and sets forth the best mode of carrying out the invention." *University of Rochester*, 375 F.3d at 1325 (Linn, J., dissenting from denial of rehearing *en banc*); *see also J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int'l, Inc.*, 534 U.S. 124, 142 (2001) ("In addition [to novelty, utility, and nonobviousness], to obtain a utility patent, a breeder must describe the plant with sufficient specificity to enable others to 'make and use' the invention after the patent term expires." (citing 35 U.S.C. § 112 ¶ 1)).

The United States' *amicus* brief urging rehearing *en banc* in *Enzo* likewise observed that "[a] straightforward reading of the text of Section 112 suggests that the test for an adequate written description is whether it provides enough written information for others to make and use the invention." Brief of United States as *Amicus Curiae*, *supra*, at 5. This is also the view of a majority of the extensive academic commentary that has developed on the issue in the wake of *Lilly*. *See University of Rochester*, 375 F.3d at 1314-1325 (appendix summarizing academic commentary including 31 articles critical of the Federal

Circuit's use of the separate written description requirement).

2. The history and structure of the Patent Act support the conclusion that Section 112 contains no separate requirement for a written description. Congress has consistently required patent applications to serve two functions: to disclose to the public a means to enable the invention and to distinguish the invention to be patented from prior inventions. Those functions are currently served by the requirement in paragraph 1 of Section 112 for a written description sufficient to enable a person skilled in the art to make and use the invention, and the requirement in paragraph 2 of Section 112 for "one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention."

Congress early on placed these two functions in the same provision. The Patent Act of 1793 required an applicant to provide a "written description" of his invention in such "exact terms, as to distinguish the same from all other things before known, and to enable any person skilled in the art or science, of which it is a branch * * * to make, compound and use the same." Ch. 11, § 3, 1 Stat. 318, 321. The requirement that an applicant "distinguish the [invention] from all other things known," was removed from the written description requirement in 1836, when Congress added to the statute the separate requirement for patent "claims" to "particularly specify and point out the part, improvement, or combination which he claims as his own invention or discovery," Patent Act of 1836, ch. 357, § 6, 5 Stat. 117, 119, now located in the second paragraph of Section 112. At the same time, the remainder of the written description requirement of the statute was modified to reflect its current structure. *See ibid.* Because the statute, since 1836, has required a patent applicant to separately specify the distinct "claims" to a patent, there is simply no reason to interpret Section 112 to impose the same requirement. Yet notwithstanding the clear purpose of the first paragraph of Section 112, the Federal Circuit's has held that "written description," as opposed to claims,

must do the work of "sufficient[ly] distinguish[ing]" the claimed subject matter "from other materials." *Eli Lilly*, 119 F.3d at 1568.

Applying the predecessor statute, this Court repeatedly explained that a patent specification describes an invention for the purpose of enabling those skilled in the relevant art to make and use the invention and not, as the Federal Circuit now claims, for some purpose apart from enablement. For example, the Court held that an inventor complied with the 1836 predecessor to Section 112 ¶ 1, and thus was entitled to a patent, "provided he specifies the means he uses in a manner so full and exact, that anyone skilled in the science to which it appertains, can, by using the means he specifies * * * produce precisely the result he describes." *O'Reilly v. Morse*, 56 U.S. (15 How.) 62, 119-120 (1854). In another case, the Court made clear that "sufficiency of the description of a patentee's invention" was tested by whether the inventor "describe[s] it as to teach the public how to practice it." *Mowry v. Whitney*, 81 U.S. (14 Wall.) 620, 643-644 (1872); *see also Lawther v. Hamilton*, 124 U.S. 1, 9-10 (1888) ("The question is whether the patent sufficiently describes the operation to be performed in order to accomplish these results.").

II. The Federal Circuit's Interpretation Of Its Separate Written Description Requirement Runs Contrary To Decisions By This Court And The Lower Courts And To Fundamental Tenets of Patent Law Designed To Create Incentives For Innovation

Even if there were a written description requirement in Section 112 distinct from enablement, it could not possibly contain the requirements imposed by the Federal Circuit in this case. Consistent with the textual demand found in the first paragraph of 35 U.S.C. 112 for a written description that enables a person skilled in the art to make and use the invention, the court of appeals correctly found that petitioner's 1984 application met what it termed the "enablement" requirement in Section 112. The

court held that petitioner's patent for monoclonal antibodies that bind to HER2 did not need to describe how to make and use the invention with improved technologies that arose after the time of filing the application. App., *infra*, 12a-13a. Applying the Federal Circuit's non-statutory requirement for a "separate written description" in Section 112, however, the court found that petitioner's patent was invalid because petitioner failed in the 1984 application to describe the same unknown future improvements.

A. The Federal Circuit's Invalidation of A Patent Because Later-Developed Technology Is Combined With The Invention Is Inconsistent With This Court's Precedents And The Purpose Of Patent Law To Encourage And Protect Both The Initial Invention And Later Improvements

As in other fields, new inventions in the biotechnology field often build on earlier inventions. The Patent Act anticipates incremental innovation by granting patents not only to anyone who "invents or discovers any new and useful process, machine, manufacture, or composition of matter," but also to anyone who invents or discovers any "improvement thereof." 35 U.S.C. § 101. The result is overlapping patents. *See Cantrell v. Wallick*, 117 U.S. 689, 694 (1886) ("[T]he great majority of patents are for improvements in old and well-known devices, or on patented inventions.").

To the extent that a later improvement depends upon earlier patented inventions, the use of the earlier inventions must be authorized (usually through a license) by the user who invents the improvement. Otherwise, that inventor's use of the improvement will infringe the first patent. *See* 35 U.S.C. § 271. Because patents are of limited duration, *see id.* § 154(a)(2), new inventors need not obtain permission from an endless chain of prior inventors.

1. Contrary to the opinion of the Federal Circuit, this Court has found for more than 100 years that the validity

of a patent is not disturbed by later improvements. "Two patents may be valid when the second is an improvement on the first, in which event, if the second includes the first, neither of the two patentees can lawfully use the invention of the other without the other's consent." *Cantrell*, 117 U.S. at 694. "A new idea may be ingrafted upon an old invention * * * and be an improvement. The prior patentee cannot use it without consent of the improver, and the latter cannot use the original without the consent of the former." *Smith v. Nicholas*, 88 U.S. (21 Wall.) 112, 118-119 (1875); *see also Temco Elec. Motor Co. v. Apco Mfg. Co.*, 275 U.S. 319, 328 (1928) ("It is well established that an improver can not appropriate the basic patent of another and that the improver without a license is an infringer and may be sued as such."). The law thereby recognizes the obvious – at the time an inventor applies for a patent, it is impossible to describe future technologies that may later embody or improve the invention. *Cf. SRI Int'l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1121 (Fed. Cir. 1985) (*en banc*) ("The law does not require the impossible. Hence, it does not require that an applicant describe in his specification every conceivable and possible future embodiment of his invention.").

If a later improvement stands on the shoulders of an unexpired patent, a person who wants to make, use, or sell that later, improved invention must obtain authorization (through a license) to use the original invention. At the same time, the inventor of the new technology is also entitled to a patent on the improvement and may exclude others, including the holder of the patent to the earlier invention, from use of the new improvement absent a license. Thus, the law offers protection to all innovation along the way.

This system also encourages competition. In exchange for giving authorization to the inventor of an improvement to make and sell that improvement, the holder of the earlier patent for the invention upon which the improvement was made often will demand the right to make and sell the improved invention himself. Thus, the public often may have more than one supplier of an improved invention, with all the benefits that inure from such competition.

The Federal Circuit's decision below invalidated petitioner's patent on its discovery of monoclonal antibodies that bind to HER2 simply because a later inventor used a new method, humanization, for making improved monoclonal antibodies that bind to HER2. Negating the need for respondent, the inventor of the improvement, to obtain a license from petitioner leaves respondent as the sole supplier. It also deprives petitioner of the very economic benefit that Congress intended to convey in order to encourage petitioner and other inventors to continue to invent and disclose such inventions.

2. The opinion below also conflicts with prior applications of the judicially-created separate written description requirement. The Federal Circuit has previously held that inventors do not need to describe all potential uses of an invention, even with existing technologies, in order for a patent to maintain its validity. *See Utter v. Hiraga*, 845 F.2d 993, 998 (Fed. Cir. 1988) ("[s]pecification may, within the meaning of 35 U.S.C. § 112 para. 1, contain a written description of a broadly claimed invention without describing all species that claim encompasses"); *In re Koller*, 613 F.2d 819, 823 (C.C.P.A. 1980) ("neither a listing of representative compounds nor an example is always necessary in completely describing a generic class"). Moreover, a patent specification need not describe "future developments * * * that might alter or even improve how the same product is made." *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1332 (Fed. Cir. 2003) (quoting district court with approval).

Before the Federal Circuit was vested by Congress with exclusive jurisdiction over patent appeals, the regional courts of appeals had reached the conclusion that there is no need to describe in a patent application how an invention might be adapted to future technologies. In *B.G. Corp. v. Walter Kiddie & Co.*, 79 F.2d 20 (2d Cir. 1935), for example, Judge Learned Hand held that the inventor of a spark plug for a gas engine had a valid patent as applied to spark plugs used in airplanes even though the inventor had not anticipated that use. Judge Hand explained that "[i]t is true that [the inventor of the spark plug] did not

foresee the particular adaptability of his plug to the airplane. * * * Nevertheless, he did not shoot in the dark; he laid down with perfect certainty what he wished to accomplish and how. * * * [H]e is not charged with a prophetic understanding of the entire field of its usefulness." *Id.* at 22; *see also Kennicott Co. v. Holt Ice & Cold Storage Co.*, 230 F. 157, 161-162 (7th Cir. 1915).

Similarly, in this case, petitioner's patent extends to all monoclonal antibodies that bind to the breast cancer antigen HER2, even those kinds not yet invented at the time of the patent application, just as a patent for spark plugs for a gas engine extended to their use in airplanes. Petitioner does not claim to have patented the ancillary chimeric and humanized antibody technologies that were later used to improve petitioner's invention. Notably, these improvements did *not* relate to the binding capacity of the antibody – the crux of petitioner's invention. Nor does petitioner claim the invention of the particular drug Herceptin, in which respondent opted to combine a monoclonal antibody that binds to HER2 with independent advances in humanized antibody technology in order to create a new drug.

But petitioner does maintain that those later innovations do not invalidate its patent. Section 112 allows the patenting of petitioner's invention, the patenting of the invention of general humanized antibody technology, and the patenting of respondent's invention of the particular humanized HER2 antibody Herceptin, provided that the distinct, yet overlapping, scope of each invention is enabled by the respective patent applications and each patent application meets the other requirements of the Patent Act.

3. Basic innovations are often enormously costly but ultimately beneficial and financially rewarding. They would be significantly hampered without a guarantee of patent stability against future challenge based on improvements. *See* Gerald J. Mossinghoff, *Progress in the Pharmaceutical Industry*, *available at* http://usinfo.state.gov/products/pubs/intelprp/progress.htm. In the case of

new drugs, research and testing cost several hundred millions of dollars, and take ten years, on average. *See ibid.* Innovation in the biotechnology industry, in particular, depends upon the stability of patents, such as petitioner's for monoclonal antibodies that bind to the HER2 antigen, so as to allow the development of downstream drugs such as respondent's anti-cancer drug Herceptin.

If later technological improvements "could be employed as a basis for rejection in 35 U.S.C. § 112, the opportunity for obtaining a basic patent upon early disclosure of pioneer inventions would be abolished." *In re Hogan*, 559 F.2d 595, 606 (C.C.P.A. 1977). Inventors would have strong incentives to hoard their inventions until they could develop themselves the most marketable improvements. *See In re Goeffe*, 542 F.2d 564, 567 (C.C.P.A. 1976) ("[T]o provide effective incentives, claims must adequately protect inventors. To demand that the first to disclose shall limit his claims to what he has found will work * * * would not serve the constitutional purpose of promoting progress in the useful arts."). That would deprive the public of prompt access to inventions. Further, it would create substantial inefficiencies because the person who makes the first invention may not be best suited to making the improvements necessary to enhance the invention's utility to the public.

Federal law is designed to create exactly the opposite incentives. The Constitution authorized an incentive structure, through the express language of the Patent and Copyright Clause, to "promote the Progress of Science and useful Arts." U.S. Const. art. I, § 8, cl. 8. This Court has emphasized that "[t]he economic philosophy behind the clause empowering Congress to grant patents and copyrights is the conviction that encouragement of individual effort by personal gain is the best way to advance public welfare through the talents of authors and inventors in 'Science and useful Arts.'" *Mazer v. Stein*, 347 U.S. 201, 219 (1954) (internal quotation marks omitted).

Indeed, the federal government has in recent years called on private companies to assist in the development of vaccines to address significant threats to public health,

such as the West Nile virus, SARS, smallpox, and anthrax. *See, e.g.*, National Institute of Allergy and Infectious Diseases, U.S. Dep't of Health & Human Servs., *NIAID Profile: Fiscal Year 2003*, at 59, 81-83. It is important that such private companies be able to disclose their inventions to the public as they occur without apprehension that subsequent improvements by others will deprive them of any share of the economic reward.

"The federal patent system * * * embodies a carefully crafted bargain for encouraging the creation and disclosure of new, useful, and nonobvious advances in technology and design in return for the exclusive right to practice the invention for a period of years." *Bonito Boats, Inc. v. Thin Craft Boats, Inc.*, 489 U.S. 141, 150-151 (1989). Acting upon the promise of the Patent Act, petitioner invested substantial time and money to invent a new, useful antibody target for the detection and treatment of breast cancer. As required, petitioner disclosed the invention to the public, including placing samples of several of its monoclonal antibodies in depositories so that they would be available to the public. App., *infra*, 6a-7a. Its compliance with the Patent Act should not be negated because others were able to improve upon its invention through technologies that did not even exist when the application was first filed.

B. The Federal Circuit's Insurmountable Hurdle Of Describing Unknown Future Improvements Conflicts With Its Settled Interpretation Of Paragraph 1 Of Section 112 And Calls Into Question The Utility Of Section 120

1. Resting the validity of a patent on the capacity of the inventor to describe the future is at odds with the settled interpretation of the enablement requirement set out in the same paragraph of Section 112.

The Federal Circuit has consistently held, as it did in this case, that inventors are not required to describe how a person skilled in the art would make or use an invention with technologies that do not exist at the time of the

patent application. In *Hogan*, 559 F.2d at 606, the Federal Circuit's predecessor concluded that "[t]o now say that [applicants] should have disclosed[, on the date of filing, a future embodiment which did not exist until later] would be to impose an impossible burden on inventors and thus on the patent system. There cannot, in an effective patent system, be such a burden placed on the right to broad claims." The Federal Circuit subsequently affirmed that "a patent applicant is not required * * * to predict every possible variation, improvement[,] or commercial embodiment of his invention." *United States Steel Corp. v. Phillips Petroleum Co.*, 865 F.2d 1247, 1250 (Fed. Cir. 1989) (quoting district court with approval); *see also Hormone Research Found., Inc. v. Genentech, Inc.*, 904 F.2d 1558, 1568 (Fed. Cir. 1990) ("[m]erely because purer and more potent forms [of a human growth hormone] might be produced using later-discovered technology does not necessarily mean that the * * * patent specification did not provide sufficient enabling disclosures as of the filing date of the application"), *cert. dismissed*, 499 U.S. 955 (1991).

Consistent with this settled law on enablement, the panel below correctly determined that "the district court erred to the extent it attempted to create an obligation for Chiron scientists to enable nonexistent technology in the 1984 filing." App., *infra*, 12a-13a. By also holding, however, that petitioner was required to foresee in its 1984 filing such nonexistent technology for purposes of the separate written description requirement, the court of appeals further compounded the problems arising out of its disregard for the statutory text.

As argued above, the first paragraph of Section 112 imposes a single statutory requirement for a patent specification that contains a "written description" that "enable[s]" a person skilled in the art to make and use the invention. But even if this Court were to reject that view and rule that there were separate "written description" and "enablement" requirements, there is no basis in the text or its structure to interpret those two provisions in the same sentence of the statute to impose such divergent requirements with regard to the effect of future technologies on a patent's validity.

See Kennecott Corp. v. Kyocera Int'l, Inc., 835 F.2d 1419, 1421 (Fed. Cir. 1987) (written description and enablement "may be viewed separately, but they are intertwined"), *cert. denied*, 486 U.S. 1008 (1988).

2. The Federal Circuit's interpretation of its separate written description requirement calls into question the meaning and purpose of Section 120 of the Patent Act. In that section, Congress provided a mechanism for filing updated ("continuation-in-part") applications that "enlarge the disclosure to include new technological information, thereby providing the public with knowledge of recent developments or improvements." *Paperless Accounting, Inc. v. Bay Area Rapid Transit Sys.*, 804 F.2d 659, 663 (Fed. Cir. 1986), *cert. denied*, 480 U.S. 933 (1987). In Section 120, if an earlier application adequately discloses an invention, a later-filed application "shall have the same effect, as to such invention, as though filed on the date of the prior application."

Petitioner's continuation-in-part applications served that intended purpose by describing, *inter alia*, improved ancillary methods for making improved antibodies that bind to HER2 (antibodies that fall within the scope of petitioner's original 1984 application), even while the original invention of antibodies that bind to the HER2 antigen remained unchanged. Yet the Federal Circuit's holding had the effect of punishing petitioner for including this updated information in its later-filed applications, contrary to the intent of Congress. Just as a patent applicant should not be required to describe future improvements, an applicant also should not have a patent invalidated for describing in a continuation-in-part application improved ways of practicing the original invention.

III. The Federal Circuit Acted In Violation Of This Court's Settled Rule That A General Verdict Cannot Be Sustained When The Verdict Rests On More Than One Theory Of Liability And One Of Those Theories Is Legally Incorrect

The Federal Circuit's judgment below is contrary to this Court's precedent holding that a jury's verdict cannot

be affirmed on appeal when the jury is charged with multiple legal grounds for determining liability and a general verdict form does not reveal whether the jury rested its verdict upon an erroneous theory of liability. *See, e.g., Maryland v. Baldwin*, 112 U.S. 490, 493 (1884); *City of Columbia v. Omni Outdoor Adver., Inc.*, 499 U.S. 365, 384 (1991). Although this Court's cases on the issue speak with a single voice, the courts of appeals are split on the issue and some continue to avoid the rule adopted by this Court. *See Davis v. Rennie*, 264 F.3d 86, 105 (1st Cir. 2001) (describing split); *Kern v. Levolor Lorentzen, Inc.*, 899 F.2d 772, 789-792 (9th Cir. 1990) (Kozinski, J., dissenting) (same).

In this case, the Federal Circuit's opinion rests upon a finding that the jury may never have made. Asked on the verdict form whether respondent had shown that petitioner's 1984 application failed "to meet EITHER the written description OR enablement requirements," the jury answered "Yes." C.A. J.A. 1 (emphasis in original). Yet the Federal Circuit determined, as a matter of law, that no jury could have found that respondent had shown that petitioner's 1984 application did not meet the enablement requirement. App., *infra*, 13a. Thus, the court of appeals affirmed on the ground that the jury "may have" entered its verdict in favor of respondent on the separate written description ground. *Ibid.* In doing so, the court followed the exhortation of respondent, which urged, over the objection of petitioner, that the Federal Circuit could "uphold a general verdict, as here, if substantial evidence supports *any* legally correct theory submitted to the jury." Resp. C.A. Br. 58. That is precisely the opposite of the rule adopted by this Court in *Baldwin* and its progeny.

As noted above, this issue is presented as the second question for the Court's review in the petition for *certiorari* pending in *Union Pacific Railroad Co. v. Barber*, No. 04-47. If the Court grants *certiorari* on that question in *Union Pacific*, the petition in this case should be held pending the resolution of that case. If the Court then reverses the

judgment in *Union Pacific*, *certiorari* should be granted in the instant case, the judgment vacated, and the case remanded for further proceedings. If the Court denies *certiorari* on that question in *Union Pacific*, the Court should grant *certiorari* on the question in this case to resolve the split in the Circuits and align the opinion below with this Court's decisions.

CONCLUSION

For the reasons set forth above, the petition for a writ of *certiorari* should be held pending the disposition of the petitions in *University of Rochester v. G.D. Searle & Co.*, No. 04-___, and *Union Pacific Railroad Co. v. Barber*, No. 04-47, and then disposed of as set forth above. In the alternative, the petition for a writ of *certiorari* should be granted.

Respectfully submitted,

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October 4, 2004

APPENDIX A

United States Court of Appeals for the Federal Circuit

03-1158, -1159

CHIRON CORPORATION,

Plaintiff-Appellant,

v.

GENENTECH, INC.,

Defendant-Cross Appellant.

Harold J. McElhinny, Morrison & Foerster LLP, of San Francisco, California, argued for plaintiff-appellant. With him on the brief were Rachel Krevans, Eric S. Walters, and Jason A. Crotty. Of counsel on the brief were Nancy J. Koch, Robert P. Blackburn, and Joseph Harry Guth, Chiron Corporation, of Emeryville, California.

Leora Ben-Ami, Clifford Chance, of New York, New York, argued for defendant-cross appellant. On the brief were Roy E. Hofer, Cynthia A. Homan, Meredith Martin Addy, and C. Noel Kaman, Brinks Hofer Gilson & Lione, of Chicago, Illinois. Of counsel on the brief were John W. Keker and Daralyn J. Durie, Keker & Van Nest, of San Fancisco, California.

Appealed from: United States District Court for the Eastern District of California

Judge William B. Shubb

DECIDED: March 30, 2004

Before RADER, *Circuit Judge*, ARCHER, *Senior Circuit Judge*, and BRYSON, *Circuit Judge*.

Opinion for the court filed by *Circuit Judge* RADER. Concurring opinion filed by *Circuit Judge* BRYSON.

RADER, *Circuit Judge*.

After a jury trial, the United States District Court for the Eastern District of California entered judgment in favor of Genentech that all claims of U.S. Patent No. 6,054,561 are invalid under 35 U.S.C. § 102 because none of the asserted claims is entitled to priority to a series of applications filed in 1984, 1985, and 1986. *Chiron Corp. v. Genentech, Inc.*, No. Civ. S-00-1252 WBS GGH (Sept. 9 & Oct. 23, 2002). Because Chiron did not adequately disclose or support the subject matter of its '561 patent in its 1984, 1985, or 1986 applications, this court affirms the district court's denial of a motion for judgment as a matter of law (JMOL) and motion for a new trial.

I.

The '561 patent claims particular monoclonal antibodies. Specifically, independent claim 19 states:[1] "A monoclonal antibody that binds to human c-erbB-2 antigen."

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[1] Chiron also relies upon independent claims 1 and 9.

Claim 1 recites:

> A monoclonal antibody that binds to a human breast cancer antigen that is also bound by monoclonal antibody 454C11 which is produced by the hybridoma deposited with the American Type Culture Collection having Accession No. HB 8484.

Claim 9 recites:

(Continued on following page)

According to modern understanding, a monoclonal antibody is a composition with a homogeneous antibody population. An antibody is a protein generated by the immune system that is capable of recognizing and binding to a specific antigen. Described in terms of its structure, an antibody is a Y-shaped protein consisting of four amino acid chains, two heavy and two light. In a simplified model sufficient for this appeal, each antibody has primarily two regions: a variable region and a constant region. The variable region, located on the ends of the arms of the Y, binds to and interacts with the target antigen. This variable region includes a complementary determining region (CDR) that recognizes and binds to a specific binding site on a particular antigen. The constant region, located on the tail of the Y, is recognized by and interacts with the immune system.

A target antigen generally has numerous binding sites, also called epitopes, recognized by CDRs on multiple antibodies. Each antibody that specifically binds to a different epitope has a different structure. Thus, one antigen may have more than one corresponding antibody. In this case, claim 19 of the '561 patent reads on monoclonal antibodies that bind to human c-erbB-2 antigen (also named HER2) – an antigen associated with breast cancer cells.

There are various methods of producing monoclonal antibodies. One method uses hybridoma technology, which

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A monoclonal antibody that binds to a human breast cancer antigen that is also bound by monoclonal antibody 520C9 which is produced by the hybridoma deposited with the American Type Culture Collection having Accession No. HB 8696.

refers to a cloned cell line that produces a single type of antibody. The hybridoma method uses the cells of various species, including mice, hamsters, rats, and humans. Murine antibodies – derived from mouse cells – are particularly important for this invention.

Another method uses genetic engineering including recombinant DNA techniques. Monoclonal antibodies made from these techniques include, among others, chimeric antibodies and humanized antibodies. A chimeric antibody combines DNA encoding regions from more than one type of species. For example, a chimeric antibody may derive the variable region from a mouse and the constant region from a human. A humanized antibody comes predominantly from a human, even though it contains nonhuman portions. Like a chimeric antibody, a humanized antibody may contain a completely human constant region. But unlike a chimeric antibody, the variable region may be partially derived from a human. The nonhuman, synthetic portions of a humanized antibody often come from CDRs in murine antibodies. In any event, these regions are crucial to allow the antibody to recognize and bind to a specific antigen.

As noted, murine antibodies play an important role in these technologies. While useful for diagnostics and short-term therapies, murine antibodies cannot be administered to people long-term without increasing the risk of a deleterious immunogenic response. This response, called Human Anti-Mouse Antibody (HAMA), occurs when a human immune system recognizes the murine antibody as foreign and attacks it. A HAMA response can cause toxic shock or even death.

Chimeric and humanized antibodies reduce the likelihood of a HAMA response by minimizing the nonhuman portions of administered antibodies. Furthermore, chimeric and humanized antibodies have the additional benefit of activating secondary human immune responses, such as antibody dependent cellular cytoxicity.

In the early 1980s, scientists at Chiron's predecessor corporation, Cetus Corp., (collectively, Chiron) began investigating monoclonal antibodies that target human breast cancer antigens. As noted above, the antigen that facilitates diagnosis and treatment of breast cancer was eventually named HER2. This investigational work led to a series of patent applications. The inventors filed their first application on February 8, 1984. Within a year, on January 11, 1985, they filed a continuation-in-part (CIP) application claiming priority based on that first 1984 application. The inventors filed another CIP application on May 21, 1986. Eventually, the application that led to the '561 patent was filed as another CIP on June 7, 1995. This appeal focuses on the '561 patent's claims to priority based on the applications filed in 1984, 1985, and 1986.

The 1984 application discloses one monoclonal antibody (454C11) that binds to HER2. The 454C11 is a murine antibody produced by the hybridoma method. While the application discloses the deposit of the hybridoma that produced the monoclonal antibody, the application does not identify the structure, function, or molecular weight of the antigen. Because the first publication that disclosed chimeric antibody technology did not appear until four months after this filing, it is not surprising that the 1984 application does not disclose any chimeric antibodies. Similarly, the first publication to disclose humanized antibodies appeared in May 1986. Thus, for good

reason, this 1984 application also does not mention any humanized antibodies.

The 1985 application discloses six additional monoclonal antibodies that bind to HER2, all of which are murine antibodies. The disclosure also refers to the deposit of an additional hybridoma for one of these monoclonal antibodies, 520C9. While the application provides an approximate antigen molecular weight of 210 kilodaltons,[2] the application does not describe the identity, structure, or function of the antigen. The application does, however, note that six of the seven antibodies likely bind to the same epitope. By the time of this application, chimeric antibody technology was known in this art field. Although the application does not specifically disclose chimeric or humanized antibodies, it adds the following disclosure:

> As used herein the term "monoclonal antibody" means an antibody composition having a homogeneous antibody population. It is not intended to be limited as regards the source of the antibody or the manner in which it is made.

The 1986 application discloses six additional murine antibodies that bind to HER2 and the deposit for three additional hybridomas. Thus, this application discloses a total of thirteen murine antibodies and deposits for five of their corresponding hybridomas, including those corresponding to 454C11 and 520C9. The application discloses that these antibodies likely bind to at least three different epitopes on HER2. Although still not identifying the

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[2] The HER2 antigen is now known to have a molecular weight of 185 kilodaltons.

antigen by name, the application discloses that its molecular weight is approximately 200 kilodaltons. Although the 1986 application makes no specific mention of chimeric or humanized antibodies, it quotes again the statement that the term monoclonal antibody "is not intended to be limited as regards the source of the antibody or the manner in which it is made."

When the '561 patent issued, Chiron sued Genentech over sales of Herceptin®, a humanized antibody useful for the long-term treatment of breast cancer. Herceptin binds to the HER2 antigen and thus inhibits the growth of cancerous cells. Because Herceptin is a humanized antibody, it minimizes any HAMA response in patients.

Before trial, the district court broadly construed the claims of the '561 patent to embrace chimeric and humanized antibodies in addition to the murine antibodies that bind to HER2. *Chiron Corp. v. Genentech, Inc.*, 266 F. Supp. 2d 1172 (E.D. Cal. 2002). Accordingly, the district court subsequently granted Chiron's motion for partial summary judgment of infringement. *Chiron Corp. v. Genentech, Inc.*, No. Civ. S-00-1252 WBS GGH, 2002 U.S. Dist. LEXIS 19126 (E.D. Cal. June 24, 2002). Also before trial, the parties stipulated that the '561 patent would be invalid under § 102 based on intervening prior art if the patent were not entitled to claim priority to the filing date of any one of the 1984, 1985, and 1986 applications. Thus, the thirteen-day jury trial adjudicated only whether any of the priority applications satisfy the written description and enablement requirements of 35 U.S.C. § 112, first paragraph. Specifically the trial determined whether the 1980s applications adequately disclosed, and thus supported, the claim to chimeric and humanized antibodies claimed in the '561 patent (with its filing date in 1995).

The jury determined that Genentech proved by clear and convincing evidence that none of the applications satisfy both the written description and the enablement requirement for the subject matter in the '561 patent's claims. The verdict form, however, did not require the jury to specify the particular requirement of § 112 left unfulfilled by each disclosure of the priority applications. After trial, the district court denied Chiron's motions for JMOL and a new trial.

Chiron appeals the denial of its post-trial motions, and Genentech conditionally "cross-appeals" the district court's claim construction. Although styled as a cross-appeal, this court treats this claim construction issue as an alternative ground for affirming the judgment. A cross-appeal is only proper if "a party seeks to enlarge its own rights under the judgment or to lessen the rights of its adversary under the judgment." *Bailey v. Dart Container Corp. of Mich.*, 292 F.3d 1360, 1362 (Fed. Cir. 2002). This court has jurisdiction under 28 U.S.C. § 1295.

II.

A trial court should grant a motion for JMOL if substantial evidence does not support the jury's factual findings, presumed or express, or if those factual findings cannot support the legal conclusions implied from the jury's verdict. *Kearns v. Chrysler Corp.*, 32 F.3d 1541, 1547-48 (Fed. Cir. 1994). This court reviews a district court's denial of a JMOL motion without deference. *Sextant Avionique, S.A. v. Analog Devices, Inc.*, 172 F.3d 817, 824 (Fed. Cir. 1999).

Section 120 of title 35 provides: "An application for patent for an invention disclosed in the manner provided

by the first paragraph of section 112 of this title in an application previously filed in the United States . . . shall have the same effect, as to such invention, as though filed on the date of the prior application." Accordingly, the '561 patent may only claim priority to an earlier application if the earlier application fulfills the requirements of § 112, first paragraph. In turn, that paragraph requires, in part, that the application "shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same." 35 U.S.C. § 112, ¶ 1.

This court has interpreted this passage as setting forth two requirements: written description and enablement. *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1330 (Fed. Cir. 2003). As explained further below, this court affirms because neither the 1985 nor the 1986 application enables the claims of the '561 patent. The 1984 application does not support the new matter added to the '561 patent and thus does not satisfy the written description requirement.

Whether the earlier applications enable the claims of the '561 patent is a question of law based on underlying facts. *In re Wands*, 858 F.2d 731, 735 (Fed. Cir. 1988). This court reviews the underlying factual findings for clear error and the legal component of enablement without deference. *Plant Genetic Sys. N.V. v. DeKalb Genetics Corp.*, 315 F.3d 1335, 1339 (Fed. Cir. 2003). Because the '561 patent is presumed valid, clear and convincing evidence must support a conclusion of invalidity. *See* 35 U.S.C. § 282; *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1375 (Fed. Cir. 1986).

The applications in this case satisfy the enablement requirement only if one skilled in the art, after reading their disclosures, could practice the invention claimed in the '561 patent without undue experimentation. *Wands,* 858 F.2d at 736-37. "But the question of undue experimentation is a matter of degree. The fact that some experimentation is necessary does not preclude enablement; what is required is that the amount of experimentation 'must not be unduly extensive.'" *PPG Indus., Inc. v. Guardian Indus., Corp.,* 75 F.3d 1558, 1564 (Fed. Cir. 1996) (quoting *Atlas Powder Co. v. E.I. du Pont De Nemours & Co.,* 750 F.2d 1569, 1576 (Fed. Cir. 1984)).

Moreover, the prior application must enable one of ordinary skill in the art to practice "the full scope of the claimed invention." *In re Wright,* 999 F.2d 1557, 1561 (Fed. Cir. 1993). Clarifying this principle, this court has explained: "That is not to say that the specification itself must necessarily describe how to make and use every possible variant of the claimed invention, for the artisan's knowledge of the prior art and routine experimentation can often fill gaps, interpolate between embodiments, and perhaps even extrapolate beyond the disclosed embodiments, depending upon the predictability of the art." *AK Steel Corp. v. Sollac,* 344 F.3d 1234, 1244 (Fed. Cir. 2003). Thus, "[t]he enabling disclosure of the specification [must] be commensurate in scope with the claim under consideration." *In re Hyatt,* 708 F.2d 712, 714 (Fed. Cir. 1983).

Whether the earlier applications enable the claims of the '561 patent is determined as of the filing date of each application. *See Plant Genetic Sys.,* 315 F.3d at 1339. As noted above, a patent disclosure need not enable information within the knowledge of an ordinarily skilled artisan. Thus, a patentee preferably omits from the disclosure any

routine technology that is well known at the time of application. *See Hybritech,* 802 F.2d at 1384. At the other end of the knowledge continuum, a patent document cannot enable technology that arises after the date of application. The law does not expect an applicant to disclose knowledge invented or developed after the filing date. Such disclosure would be impossible. *See In re Hogan,* 559 F.2d 595, 605-06 (CCPA 1977). Nascent technology, however, must be enabled with a "specific and useful teaching." *Genentech, Inc. v. Novo Nordisk, A/S,* 108 F.3d 1361, 1368 (Fed. Cir. 1997). The law requires an enabling disclosure for nascent technology because a person of ordinary skill in the art has little or no knowledge independent from the patentee's instruction. Thus, the public's end of the bargain struck by the patent system is a full enabling disclosure of the claimed technology. *See, e.g., J.E.M. AG Supply, Inc. v. Pioneer Hi-Bred Int'l, Inc.,* 534 U.S. 124, 142 (2001).

"Because a patent specification must enable the full scope of a claimed invention, an enablement inquiry typically begins with a construction of the claims." *AK Steel,* 344 F.3d at 1241 (citation omitted). In this case, neither party challenges the district court's claim construction in the first instance. As a precaution, Genentech posits a "cross-appeal" on claim construction in the event this court reverses the denials of Chiron's post-trial motions. Because Genentech's arguments regarding claim construction are alternative grounds for affirming the verdict, *Bailey,* 292 F.3d 1360, this court proceeds on the premise that the claim construction is correct. The district court's claim construction reads the claims of the '561 patent to embrace not only murine antibodies but also chimeric and humanized antibodies that bind to HER2.

At the outset, this court focuses primarily on chimeric antibodies. If the applications in this case do not enable or provide new matter support for chimeric antibodies, this court need not proceed to examine humanized antibodies. The trial record shows that genetically engineered antibodies, specifically chimeric antibodies, first appeared as a successful technology in the literature of this art field in May 1984, four months after the February filing date of the first application. Because the first publication documenting the successful creation of chimeric antibodies occurred after the filing of the 1984 application, this sequence of events shows that this new technology arose after the filing date and thus was, by definition, outside the bounds of the enablement requirement. *See Hogan,* 559 F.2d at 605-06.

The district court in this case attempted to justify the jury's enablement verdict on the basis that the 1984 applicants might have known about chimeric antibodies before the initial publication on that subject. The trial court cited speculative testimony in the trial about the hypothetical possibility that information may leak out in advance of an initial publication on an important academic topic. At no point did the record show that Chiron scientists actually knew of chimeric antibodies before their filing, only that it was hypothetically possible for them to have acquired some advance knowledge. Even if the record shows that scientists routinely discuss their work with others in the same art field before publication, ethics would suggest impropriety in publishing that information in advance of the actual originator of the ideas. In any event, as noted, the enablement requirement does not extend to technology that arises after the time of filing. *Plant Genetic Sys.,* 315 F.3d at 1340-41. In sum, the

district court erred to the extent that it attempted to create an obligation for Chiron scientists to enable non-existent technology in the 1984 filing.

In the context of the 1984 application, the trial court and this court need not rely on enablement to support the jury's verdict. The jury may have found that the 1984 application does not provide any support for the new matter, chimeric antibodies, claimed in the '561 patent. Because chimeric antibody technology did not even exist at the time of the 1984 filing, the record conclusively supports that the Chiron scientists did not possess and disclose this technology in the February 1984 filing. *See Union Oil Co. of Cal. v. Atl. Richfield Co.,* 208 F.3d 989, 998 (Fed. Cir. 2000) (A jury determined "that, as of the filing date, the inventor conveyed with reasonable clarity to those of skill in the art that he was in possession of the subject matter of the claims."). Thus, the '561 patent cannot claim priority based on the 1984 application because it fails to comply with the written description requirement.

The written description requirement prevents applicants from using the amendment process to update their disclosures (claims or specifications) during their pendency before the patent office. Otherwise applicants could add new matter to their disclosures and date them back to their original filing date, thus defeating an accurate accounting of the priority of invention. *See* 35 U.S.C. § 132. Priority is always a vital issue in patent prosecution procedures – often determining entitlement to an invention. In 1967, this courts predecessor began to enforce priority as a component of the 35 U.S.C. § 112, first paragraph, written description requirement. *In re Ruschig,* 379 F.2d 990 (CCPA 1967). In the context of a new claim added

"[a]bout a year after the present application was filed," the *Ruschig* court sought to determine "whether [the new] claim 13 is supported by the disclosure of appellants' application." *Id.* at 991. As later explained, "[t]he function of the description requirement is to ensure that the inventor had possession, as of the filing date of the application relied on, of the specific subject matter later claimed by him." *In re Wertheim,* 541 F.2d 257, 262 (CCPA 1976). In this case, the Chiron scientists, by definition, could not have possession of, and disclose, the subject matter of chimeric antibodies that did not even exist at the time of the 1984 application. Thus, axiomatically, Chiron cannot satisfy the written description requirement for the new matter appearing in the '561 patent, namely chimeric antibodies. *See, e.g., In re Kaslow,* 707 F.2d 1366, 1375 (Fed. Cir. 1983) ("The test for determining compliance with the written description requirement is whether the disclosure of the application as originally filed reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter, rather than the presence or absence of literal support in the specification for the claim language." (citation omitted)).

Turning next to the 1985 and 1986 applications, this court examines compliance with the enablement requirement. For these applications, the jury was entitled to determine as a matter of fact that chimeric antibodies were not future technology, but were nascent technology requiring a "specific and useful teaching." *Genentech,* 108 F.3d at 1368. This question, in turn, depends on evidence that undue experimentation would be required to make and use the chimeric antibodies claimed by the '561 patent. Of course, undue experimentation "is not a single, simple factual determination, but rather is a conclusion

reached by weighing many factual considerations." *Wands,* 858 F.2d at 737. These factual considerations include "(1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims." *Id.*

Evidence presented to the jury showed that creation of genetically engineered antibodies, such as chimeric antibodies, required significant experimentation in 1985 and 1986 because those antibodies were unpredictable at that early stage of development. The record also shows that only a few laboratories contained the necessary equipment to make these new antibodies – another indication of the excessive experimentation necessary to make and use that technology at that time. The 1985 and 1986 applications provide no disclosure of either how to make and use chimeric antibodies or working examples of chimeric antibodies within the scope of the '561 patent's claims.

Moreover, as mentioned above, "[t]he enabling disclosure of the specification [must] be commensurate in scope with the claim under consideration." *Hyatt,* 708 F.2d at 714. Here, the scope of the claim includes not only murine but also chimeric antibodies. While Chiron's applications certainly enable murine antibodies, they do not enable chimeric antibodies. Although an aspect of the claimed invention included the binding of an antibody to a breast cancer antigen, Chiron's disclosure fell short of providing a "specific and useful teaching," *Genentech,* 108 F.3d at 1368, of all antibodies within the scope of the claim.

By the filing date of the 1986 application, Chiron contends that chimeric antibodies were so well known that they had become routine technology. Chiron particularly highlights a number of publications before the 1986 application that disclosed methods of making chimeric antibodies. Accordingly, Chiron argues that the 1986 application need not specifically enable chimeric antibodies, because technicians of ordinary skill in this art could make and use them by that time without undue experimentation. Substantial evidence, however, supports the jury's implicit finding that the technology was still nascent at the time of the 1986 application (as well as, of course, at the time of the 1985 application) and thus would have still required undue experimentation.

In particular, Genentech's expert, Dr. French, testified that making chimeric antibodies was not routine technology in 1985 or 1986. Dr. French also testified that, by 1986, only a few laboratories had the capacity and expertise necessary to make genetically engineered antibodies. Dr. Larrick, another one of Genentech's experts, testified that polymerase chain reaction (PCR), a technique that facilitated the manufacture of genetically engineered antibodies including chimeric antibodies, did not become widespread until sometime between 1986 and 1988. Although PCR is not necessary to make chimeric antibodies, PCR diminishes the difficulties associated with manufacturing genetically engineered antibodies. Furthermore, by 1989, an article authored by a pioneer in the field described techniques of chimeric antibodies as "obviously those of a very young and very ambitious field." Sherie L. Morrison, *Genetically Engineered (Chimeric) Antibodies,* 24 Hosp. Practice (No. 10) 65, 75 (Oct. 15, 1989). The article further noted: "We are all new to the game." Thus,

substantial evidence supports the finding that chimeric antibodies were still a nascent technology at the time the 1985 and 1986 applications were filed. Accordingly, the record amply supports the jury's conclusion that the 1985 and 1986 applications do not enable the claims of the '561 patent without undue experimentation.

While agreeing with the conclusion that the '561 patent may not claim priority to the 1984 application, the concurrence reads *Hogan* and *Plant Genetics* as allowing an inquiry into whether an application must enable future technology. This court cannot avoid the precedent of *Hogan,* which is binding unless overruled *en banc,* by virtue of the more recent *Plant Genetics. See Allergan, Inc. v. Alcon Labs., Inc.,* 324 F.3d 1322, 1332-34 (Fed. Cir. 2003). But even if earlier precedent could be disregarded, this court does not read *Plant Genetics* to hold that an application must enable unknown, future technology. *Plant Genetics* states:

> We do not read *Hogan* as allowing an inventor to claim what was specifically desired but difficult to obtain at the time the application was filed, unless the patent discloses how to make and use it. *In Hogan, amorphous propylene, on the record before the court, was not known or in existence when the application was filed. In the present case, however, monocots existed in 1987 and stably-transformed monocot cells were highly desirable.* PGS indeed asserts that monocot cells were already being stably transformed. Thus, monocots and stably transformed monocot cells were not an unknown concept that came into existence only after 1987. But stably transformed monocot cells were difficult to produce, and the '236 patent gave no instruction how.

315 F.3d at 1340 (emphasis added). Thus, *Plant Genetics* distinguishes *Hogan* because stably transformed monocots were nascent technology when the application was filed, unlike the unknown and nonexistent amorphous propylene in the prior case. In the present case, chimeric antibodies, like the amorphous propylene in *Hogan,* did not even appear for the first time until several months after the 1984 application.

Because the '561 patent is invalid for the reasons noted above, this court need not reach the question of claim construction. This case poses a particular challenge for accurate assessment of the meaning of the claim terms. In this case, the meaning of "monoclonal antibody" may not have been stagnant between the earlier applications and the '561 patent. The ordinary usage of "monoclonal antibody" in the early 1980s was narrow. For example, one treatise defines "monoclonal antibody" in these narrow terms: "Antibody secreted by a hybridoma clone. Because each such clone is derived from a single B cell, all of the antibody molecules it makes are identical." Bruce Alberts et al., Molecular Biology of the Cell G-15 (3d ed. 1994); *accord* Bruce Alberts et al., Molecular Biology of the Cell 182-84 (1983). Indeed, another textbook expressly equated "monoclonal antibody" with "hybridoma antibody." Leroy E. Hood et al., Immunology 20 (1984). Thus, the term "monoclonal antibody" in 1984 apparently referred to antibodies [illegible] with hybridoma and was not broad enough to encompass chimeric antibodies. *See* Alan Munro, *Uses of Chimaeric Antibodies,* 312 Nature 597 (1984) (differentiating monoclonal antibodies from chimeric antibodies). Accordingly, when the earliest priority application was filed, "monoclonal antibody" apparently

referred only to a hybridoma-derived antibody. The 1984 application did not expressly redefine the term.[3]

The '561 patent, however, included a definition for "monoclonal antibody":

> The term "antibody" encompasses polyclonal and monoclonal antibody preparations, as well as preparations including hybrid antibodies, altered antibodies, chimeric antibodies and, [sic] humanized antibodies.
>
> As used herein, the term "monoclonal antibody" refers to an antibody composition having a homogeneous antibody population. The term is not limited regarding the species or source of the antibody, nor is it intended to be limited by the manner in which it is made. The term encompasses whole immunoglobulins.

'561 patent, col. 8, ll. 36-45. Thus, the '561 patent defined "monoclonal antibody" to include chimeric and humanized antibodies. Still only a portion of this updated meaning of "monoclonal antibody" can claim priority to the earliest application. If required to engage in claim construction, therefore, this court would face a dilemma: Either construe the term according to the meaning of the earliest application but contrary to the explicit definition in the '561 patent or construe the term according to the explicit

[3] The additional disclosure of the 1985 and 1986 applications, which stated that "monoclonal antibody" "is not intended to be limited as regards the source of the antibody or the manner in which it is made," may have had some broadening effect on the ordinary meaning of the term. This court, however, need not decide that issue. In any event, the 1984 application did not exercise the lexicographer's option of expressly defining the disputed term.

definition in the '561 patent but broader than the disclosure of the earliest application. Again, the latter alternative would run afoul of the prohibition against importing new matter into later patent documents. As noted, however, the record amply supports the jury's verdict of invalidity without reaching this complex claim construction question.

III.

A trial court should grant a motion for a new trial if (1) the jury instructions were erroneous or inadequate, (2) the court made incorrect and prejudicial admissibility rulings, or (3) the verdict is contrary to the great weight of the evidence. *Murphy v. Long Beach,* 914 F.2d 183, 186 (9th Cir. 1990); *Chalmers v. City of Los Angeles,* 762 F.2d 753, 761 (9th Cir. 1985). Chiron asserts that it is entitled to a new trial based on the first and second avenues. This court reviews the denial of a new trial motion after a jury verdict for an abuse of discretion. *Advanced Cardiovascular Sys., Inc. v. Medtronic, Inc.,* 265 F.3d 1294, 1308 (Fed. Cir. 2001); *De Saracho v. Custom Food Mach., Inc.,* 206 F.3d 874, 880 (9th Cir. 2000).

With respect to the jury instructions, Chiron assigns error to four separate rulings. This court reviews jury instructions in their entirety and "only orders a new trial when errors in the instructions as a whole clearly misled the jury." *Delta-X Corp. v. Baker Hughes Prod. Tools, Inc.,* 984 F.2d 410, 415 (Fed. Cir. 1993). Furthermore, Chiron "must show both fatal flaws in the jury instructions and a request for alternative instructions which could have corrected the flaws." *Id.*

First, Chiron argues that the district court erred by instructing the jury on Genentech's burden of proof without also adding an instruction on the presumption of the '561 patent's validity. This court disagrees, because the presumption of validity and heightened burden of proving invalidity "are static and in reality different expressions of the same thing – a single hurdle to be cleared." *Am. Hoist & Derrick Co. v. Sowa & Sons, Inc.*, 725 F.2d 1350, 1360 (Fed. Cir. 1984); *see also Moba, B.V. v. Diamond Automation, Inc.*, 325 F.3d 1306, 1319 (Fed. Cir. 2003). Moreover, this court has explained: "[T]he presumption is one of law, not fact, and does not constitute 'evidence' to be weighed against the challenger's evidence." *Avia Group Int'l Inc. v. L.A. Gear Cal., Inc.*, 853 F.2d 1557, 1562 (Fed. Cir. 1988). Therefore, the district court did not err in declining to include a jury instruction on the presumption of validity because the jury applied the correct "clear and convincing evidence" standard.

Second, Chiron argues that the district court erred by instructing the jury on the law of written description. In particular, Chiron complains that three instructions – the first and third of which were not grouped with the written description instructions – collectively may have directed the jury to find the '561 patent invalid if the earlier applications did not describe every embodiment known to skilled artisans as of the filing dates. The first instruction set forth the construction of "monoclonal antibody." The second instruction stated: "An application satisfies the written description requirement if persons of ordinary skill in the art at the time the application was filed would recognize from the application that the inventor actually invented the full scope of the invention as finally claimed in the patent." The third instruction set forth that the jury

would "determine whether the forms referred to in the definition of 'monoclonal antibody' were or were not known in the art at the time the 1984, 1985, and 1986 applications were filed." This court rejects Chiron's challenge, because the district court instructed the jury on the proper standard for the written description requirement in the second instruction. Even though the second instruction did not echo the precise language of this court's cases, this court has stated that "compliance with § 112 has always required sufficient information in the original disclosure to show that the inventor possessed the invention at the time of the original filing." *Moba,* 325 F.3d at 1320. The district court's instruction embodies the principle of this court's statement in *Moba.* The district court need not use identical language to this court's opinions in its instructions.

Separately, Chiron challenges another instruction on written description, which the district court based on *Gentry Gallery, Inc. v. Berkline Corp.,* 134 F.3d 1473 (Fed. Cir. 1998), and *Cooper Cameron Corp. v. Kvaerner Oilfield Products, Inc.,* 291 F.3d 1317 (Fed. Cir. 2002). In particular, the court instructed the jury:

> One way Genentech can meet its burden of proving that an earlier application fails to satisfy the written description requirement is to show, by clear and convincing evidence, that the entirety of the specification of an earlier application would clearly indicate to persons of ordinary skill in the art that the invention described in that application is of a much narrower scope than the invention ultimately claimed in the '561 patent.
>
> In considering this issue, the particular question you must decide is whether the 1984, 1985 or 1986 applications clearly indicate to a person of ordinary skill in the art that the invention described

> is . . . narrower in scope than the claims of the '561 patent at issue.

Chiron argues that this instruction invited the jury to apply a test that does not correspond to this court's written description law. This court again rejects Chiron's argument. Once again, though using different words, the district court's instruction captures the essence of the written description doctrine that a patent cannot claim priority to earlier applications if it includes new matter not present in those earlier disclosures. *Vas-Cath Inc. v. Mahurkar,* 935 F.2d 1555, 1563-64 (Fed. Cir. 1991). Therefore, this court finds no error in the jury instructions on written description.

Third, Chiron argues that the district court erred by instructing the jury on the law of enablement. In particular, Chiron complains that the district court erred in rejecting the following two proposed instructions:

> The patent application need only enable what it is claimed. Features or characteristics that are not claimed need not be enabled. In this case, the novel aspect of the invention claimed in the '561 patent concerns monoclonal antibodies capable of binding to a specific breast cancer antigen.
>
> To meet the enablement requirement, an application need not enable every way of making the claimed invention. An application meets the enablement requirement if it enables even one way of making the claimed invention.

This court rejects the notion that the district court erred by declining to include these instructions. The district court provided a succinct and correct summary of the law of enablement that Chiron does not challenge. A

trial court need not further instruct the jury on what enablement does *not* require. *Cf. Novo Nordisk A/S v. Becton Dickinson & Co.*, 304 F.3d 1216, 1219-20 (Fed. Cir. 2002) (affirming a district court's refusal to include an instruction that "obvious to try" is not a correct obviousness standard).

Lastly, Chiron argues that the district court erred by instructing the jury that the validity of the dependent claims stands or falls with the validity of the independent claims. Chiron correctly cites the general rule that "a party challenging the validity of a claim, absent a pretrial agreement or stipulation, must submit evidence supporting a conclusion of invalidity of *each* claim the challenger seeks to destroy." *Shelcore, Inc. v. Durham Indus., Inc.*, 745 F.2d 621, 625 (Fed. Cir. 1984) (emphasis in original). The district court clearly recognized and understood that general rule. The district court, however, also recognized that, in this case, the validity challenges to the independent claims coincided with the validity challenges to the dependent claims; the sameness of the inquiries permitted the treatment of all claims at once. *Cf. Nat'l Recovery Techs., Inc. v. Magnetic Separation Sys., Inc.*, 166 F.3d 1190, 1198 (Fed. Cir. 1999) (holding that, under the facts of that case, the dependent claims were invalid solely because their independent claim was invalid). Moreover, the district court's instruction eliminated the potential for an inconsistent verdict; this court commends such foresight. This court, therefore, holds that the district court did not err in instructing the jury, particularly when those instructions are examined as a whole and read in context.

With respect to the prejudicial evidence, Chiron assigns error to three rulings. This court will reverse the district court's denial of a new trial motion based on

evidentiary rulings only if Chiron establishes both that the rulings were an abuse of discretion and that it suffered substantial prejudice. *Ruvalcaba v. Los Angeles,* 64 F.3d 1323, 1328 (9th Cir. 1995); *Advanced Cardiovascular,* 265 F.3d at 1308; *United States v. 99.66 Acres of Land,* 970 F.2d 651, 658 (9th Cir. 1992).

First, Chiron argues that the district court erred in admitting evidence regarding the accused drug product Herceptin and regarding the absence of a commercial embodiment by Chiron. This court rejects Chiron's argument, because these facts related to Genentech's defenses. For example, post-1986 evidence, including evidence regarding Herceptin, may show what was known about making and using humanized antibodies in 1986. The absence of a commercial embodiment by Chiron also bears on whether chimeric or humanized antibodies within the scope of the claims of the '561 patent were routine technology. Accordingly, that evidence is relevant to enablement. Moreover, the district court issued a limiting instruction on the evidence relating to Herceptin, which stated that the jury may consider it helpful in deciding whether the 1986 application meets the enablement and written description requirements. Chiron also takes issue with Genentech's mention of this evidence in its closing argument. *See Union Carbide Chems. & Plastics Tech. Corp. v. Shell Oil Co.,* 308 F.3d 1167, 1183-84 (Fed. Cir. 2002). But Chiron points to no evidence of jury prejudice as a result of the identified statements, which were buried in a seventy-seven page transcript of Genentech's closing argument. *See Hemmings v. Tidyman's Inc.,* 285 F.3d 1174, 1194 (9th Cir. 2002) (explaining that an isolated comment during sixty-six page closing argument did not warrant a new

trial). Accordingly, this court declines to assign reversible error in denying a new trial based on this evidence.

Second, Chiron argues that the district court erred in admitting evidence relating to unclaimed features, such as binding to particular epitopes or specific therapeutic effects. Chiron particularly objects to evidence regarding the extent of the HAMA response caused by murine antibodies. This court rejects Chiron's argument, because the district court recognized that testimony regarding the HAMA response and epitope binding was relevant to the claimed features of the monoclonal antibodies. Unless the claim construction is incorrect (which Chiron does not assert), this testimony is relevant.

Finally, Chiron argues that the district court erred in excluding previously admitted documents from the prosecution of a related application assigned to Genentech (the Drebin/Greene application). This court rejects Chiron's argument. Chiron first proffered this evidence, which related to the '561 patent's priority date, before declaration of an interference between the '561 patent and the Drebin/Greene application. When the Board of Patent Appeals and Interferences issued a Notice of Interference, the district court decided that it would strike prior evidence introduced by Chiron and informed Chiron that it would be "inclined" to grant a mistrial. But when the court directly asked Chiron whether it was making a motion for a mistrial, Chiron expressly declined to do so. Accordingly, the district court did not err in declining Chiron's post-trial motion for a new trial based on Chiron's introduction of evidence that was later stricken. Thus, none of these alleged errors warrants reversing the district court's denial of a new trial.

IV.

Because substantial evidence supported the jury's verdict that the '561 patent cannot claim priority to any of the 1984, 1985, and 1986 applications and because the district court did not err in denying Chiron's motion for a new trial, this court affirms the judgment of the district court.

COSTS

Each party shall bear its own costs.

AFFIRMED.

BRYSON, *Circuit Judge*, concurring.

I concur in the judgment and in most of the court's opinion. With respect to the issue of priority, I agree that because of a failure to satisfy the written description requirement, Chiron is not entitled to priority back to 1984 for claims broadly construed to incorporate chimeric antibodies. I disagree with the court, however, in holding that the district court erred when it sustained the jury's verdict that the 1984 application did not enable the chimeric antibodies claimed in the '561 patent. I would uphold the jury's verdict in that regard. In my view, the jury permissibly concluded that the 1984 application, like the 1985 and 1986 applications, did not enable chimeric antibodies.

Citing *In re Hogan,* 559 F.2d 595 (CCPA 1977), the court holds that because it would be impossible for an applicant "to disclose knowledge invented or developed after the filing date" of the application, and because "the

creation of chimeric antibodies first occurred after the 1984 application," the timing of the application and the development of chimeric antibody technology "precluded any enablement analysis at all." To be sure, the enablement issue as to the 1984 application does not affect the outcome of this case, because the court properly finds that the 1984 application failed to satisfy the written description requirement and the patentee therefore was not entitled to priority as of the date of the 1984 application. Nonetheless, I do not agree that the enablement requirement is inapplicable to the 1984 application.

Section 112, paragraph 1, of the Patent Act requires that an applicant who wishes to claim property rights in an invention must bear the burden of demonstrating enablement by showing the public how to make and use the invention. As applied to this case, that principle would require the 1984 application to enable the invention claimed in that application. In my view, *In re Hogan* does not prevent us from reaching that conclusion.

In *Hogan,* the PTO rejected certain claims for lack of enablement after concluding that, in light of post-application developments, the claim scope was broad enough to read on certain embodiments that were not enabled by the application. The Court of Customs and Patent Appeals reversed, holding that it was enough that the application enabled the claims as construed in light of the state of the art at the time of filing. As the court explained, "if appellants' 1953 application provided sufficient enablement, considering all available evidence (whenever that evidence became available) of the 1953 state of the art, i.e., of the condition of knowledge about all art-related facts existing in 1953, then the fact of that enablement was established for all time and a later

change in the state of the art cannot change it." 559 F.2d at 605.

I have no quarrel with the holding of *Hogan* – that enablement must be judged in light of the state of the art at the time of the application. What must be guarded against, in my view, is to interpret *Hogan* to hold that claims that are enabled by the original application may be construed broadly enough to encompass technology that is not developed until later and was not enabled by the original application. Although there is language in *Hogan* that could be read to support such a result, this court has recently (and properly, in my view) expressed reservations about reading *Hogan* that broadly. *See Plant Genetic Sys., N.V. v. DeKalb Genetics Corp.,* 315 F.3d 1335, 1340-41 (Fed. Cir. 2003).

In *Plant Genetic Systems,* the court explained that *Hogan* "simply held that one could not use a later-existing state of the art to invalidate a patent that was enabled for what it claimed at the time of filing." 315 F.3d at 1340. This makes perfect sense because, as the *Hogan* court explained, "The use of a subsequently-existing improvement to show lack of enablement in an earlier-filed application on the basic invention would preclude issuance of a patent to the inventor of the thing improved, and in the case of issued patents, would invalidate all claims . . . therein." 559 F.2d at 606. The court in *Hogan* did not take the additional step of holding that the claims in that case should be construed to encompass the later-arising technology. In fact, *Hogan* explicitly declined to construe the claims at issue in that case, although the court suggested in dictum that the scope of the claims might be broad enough to encompass the later-arising technology that was at issue. *Id.* The court in *Plant Genetic Systems* noted that

the technology that was developed after the application was filed (and thus was not enabled by the application) fell within the scope of the claims if the claims were broadly construed, but added that "the claims (*albeit with a narrower scope*) might be nevertheless enabled in view of the state of the art then existing." 315 F.3d at 1341 (emphasis added). *Plant Genetic Systems* further cautioned against using "the dicta from *Hogan*" to "expand the coverage of claims, yet create a new, lower standard of enablement." *Id.*

I think the proper approach, suggested in the concurring opinion in *Hogan* and in *Plant Genetic Systems,* is to address cases of new technology by construing claims, where possible, as they would have been understood by one of skill in the art at the time of the invention, and not construing them to reach the as-yet-undeveloped technology that the applicant did not enable. That approach preserves the benefits of patent protection for the invention that the applicant has actually conceived and enabled, without extending those benefits for an invention that the applicant may not have conceived and certainly has not enabled.

In this case, however, the patentee is not seeking to preserve the validity of its claims by construing them in accordance with the state of the technology at the time of the invention. Instead, Chiron is arguing that the 1984 application provides support for claims covering technology that was not in existence at that time. In that setting, where the claims are accorded a scope that exceeds the scope of the enablement, I would hold that the claims are not entitled to priority as of 1984, not only because of a failure to satisfy the written description requirement, but also because the 1984 application does not enable the

asserted claims. I would therefore uphold the jury's verdict of lack of enablement not only as to the 1985 and 1986 applications, but as to the 1984 application as well.

APPENDIX B

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA

CHIRON CORPORATION,	NO. CIV. S-00-1252 WBS GGH
Plaintiff,	MEMORANDUM AND ORDER RE: RENEWED MOTION FOR JMOL; MOTION FOR NEW TRIAL
v.	
GENENTECH, INC.,	
Defendant.	(Filed Oct. 23, 2002)

On September 12, 2002, this court denied Chiron's motion for judgment as a matter of law. ("September 12 Order.") Chiron has since renewed its motion for judgment as a matter of law, relying on all of the arguments it made in the original motion. Chiron also moves in the alternative for a new trial pursuant to Rule 59(a), alleging that (1) the jury instructions were erroneous and incomplete; (2) irrelevant and prejudicial evidence was admitted at trial; (3) the jury verdict was against the clear weight of the evidence; and (4) Genentech's counsel made prejudicial statements in his closing argument that made it impossible for Chiron to get a fair trial.

I. Renewed Motion of Judgment as a Matter of Law

Judgment as a matter of law ("JMOL") is appropriate when the only verdict a reasonable jury could reach would be in favor of the moving party. *Reeves v. Sanderson Plumbing Prods., Inc.*, 530 U.S. 133, 150 (2000); *Santos v. Gates*, 287 F.2d 846, 851 (9th Cir. 2002). The court must

determine whether there is "substantial evidence" to support the jury's verdict. *Maynard v. City of San Jose,* 37 F.3d 1396, 1404 (9th Cir. 1994). The same standard applies to a renewed motion for JMOL as to a motion for JMOL. *See Juhnke v. EIG Corp.,* 444 F.2d 1323, 1325 (9th Cir. 1971).

A. Correct Legal Standard

Chiron acknowledges that the court has already rejected each of the arguments it now makes in support of its renewed motion for JMOL. However, Chiron argues that the court misapplied the standard for JMOL in the September 12 Order because the court did not refer explicitly to the clear and convincing burden of proof Genentech bore at trial. Chiron has misread the September 12 Order. After considering Chiron's arguments and the trial record, the court concluded that "the jury could . . . have found in Genentech's favor based on the evidence adduced at trial." (September 12 Order, at 2.) The jury was clearly instructed at trial that it was Genentech's burden to prove the invalidity of Chiron's patent by clear and convincing evidence. (*See* Jury Instruction No. 9.)

If there is anything that the parties and the court have understood throughout the first phase of the trial in this case it was Genentech's burden of proof by clear and convincing evidence. That understanding has been implicit in every discussion the court has had with counsel and in every ruling the court has made. In ruling that the evidence was sufficient to support the jury's verdict, the court necessarily considered the clear and convincing standard of proof. *See Rajala v. Allied Corp.,* 191 F.2d 610, 615 (10th Cir. 1990) ("because the inquiry . . . asks us whether

there was evidence such that the jury could have *properly* found for the party against whom the motion is made, we must necessarily frame our analysis in terms of the underlying burden of proof").

B. Cooper Cameron/Gentry Gallery

For the reasons discussed in the September 12 Order, the court rejects Chiron's argument that no reasonable jury could have found that Chiron's patent applications were limited to antibodies of a particular isotype with certain cell-killing characteristics when conjugated with a toxin. (*See* September 12 Order at 6-7.) As discussed in that Order, the patent applications themselves, as well as the trial testimony of Drs. Harris, Ring, Bjorge and French, provide substantial evidence from which a jury could have found, by clear and convincing evidence, that 1984-1986 applications described an invention that was much narrower in scope than the invention ultimately claimed in the '561 patent. (*Id.*; *see also* Mem. and Order Re: Priority at 31-34.)

The court has also previously rejected Chiron's argument that the court applied the wrong legal standard under *Cooper Cameron v. Kvaerner Oilfield Prods., Inc.*, 291 F.3d 1317, 1323 (Fed. Cir. 2002), and *Gentry Gallery v. Berkline Corp.*, 134 F.3d 1473, 1479 (Fed. Cir. 1998).(*See* Mem. Re: Jury Instructions at 6.) To the contrary, it has applied the *Cooper Cameron / Gentry Gallery* test almost to the letter. (*See* Jury Instruction No. 22) (tracking the language of *Cooper Cameron*).

C. Insufficient Information About the Antigen

Chiron next argues that the priority applications contained information that was sufficient as a matter of law to describe the HER2 antigen to a person of ordinary skill in the art for purposes of claiming the genus of antibodies that binds to it. For the reasons stated in the September 12 Order, the jury could have found by clear and convincing evidence that there was insufficient information about the antigen to describe the whole genus of monoclonal antibodies that binds to it. (*See* September 12 Order at 5-6.) The question is not whether the parent applications provided *some* information about the antigen, but rather whether the information they did provide was adequate to meet the written description requirement. Drs. Unkeless and French testified that the antigen was not well-characterized, and none of the priority applications provides the accurate molecular weight for the antigen. In addition, it was established that in 1986, Dr. Ring called the antigen he had discovered an "unidentified protein" that was "not well described in the literature." (*See* Ex. 2374.) The evidence also reflected that Dr. Ring had difficulty identifying the antigen he discovered as HER2 and did not purify the antigen himself until after 1986.

Contrary to Chiron's assertions, evidence that scientists in 1984-1986 commonly referred to antigens by the antibodies that bound to them does not compel a jury verdict in Chiron's favor. The PTO's Synopsis of Application of Written Description Guidelines, adopted in relevant part by the Federal Circuit in *Enzo Biochem, Inc. v. General-Probe, Inc.*, 296 F.3d 1316 (Fed. Cir. 2002), states that a genus of antibodies that binds to a particular antigen may be described by reference to some antibodies

if the antigen is "well characterized," and the specification "provides a clear protocol by which antigen X was isolated" and gives an accurate molecular weight of the antigen. *See* http://www.uspto.gov/web/patents/guides.htm. Merely referring to some antibodies that bind to the antigen, without more, is not sufficient to describe the class of antibodies that binds to the same antigen. *Id.* Moreover, *Enzo* rejects the proposition that the description of one species (for example by deposit) necessarily satisfies the written description requirement for a claim to a genus. *Enzo,* 296 F.3d at 1326-27. As discussed above, there was substantial evidence presented at trial that the antigen was not sufficiently described in the parent applications.[1]

D. "Unclaimed Features"

The court has never disagreed with the proposition that unclaimed features of the invention need not be enabled or described. (*See* Mem. Re: Jury Instructions at 5-6, 9.) The court, however, has rejected Chiron's argument that evidence about other species of antibodies that have less of a HAMA response, bind to different epitopes, and have an antiproliferative effect, is irrelevant to the question of whether the 1984-1986 applications described a representative number of species. (*See* September 12 Order at 5-6.) As the court explained in its September 12

[1] Even if there were overwhelming evidence in the record that the antigen was well characterized, which there was not, the evidence would still support a lack of enablement verdict. As Genentech points out, Genentech "never argued at trial, and the jury was not instructed, that the incomplete description of the antigen in the priority applications failed to enable the class of hybridoma-derived HER2 antibodies." (Genentech Opp'n at 9.) Rather, Genentech argued that the applications failed to enable chimeric and humanized antibodies.

Order, that evidence is "relevant to the common, necessary features of the claimed monoclonal antibodies – namely that they must bind in an immunologically significant way to HER2." (September 12 Order at 5.) The authorities cited by Chiron in its renewed motion for JMOL are not to the contrary.

E. Significance of Chimeric and Humanized Antibodies

Chiron contends that chimeric and humanized antibodies did not need to be enabled or described by the parent applications because an applicant is not required to describe every species within a genus or enable every embodiment of a claimed invention. Chiron also argues that the chimeric and humanized aspect of monoclonal antibodies is not claimed by the '561 patent and therefore does not need to be enabled or described. The court has already addressed this argument, and rejected it, on numerous occasions. (*See* Trial Tr. 1909:16-1914:35; September 12 Order, at 3-4; Mem. Re: Jury Instructions, at 12, 14; Mem. and Order Re: Priority, at 15-20.) Further comment is unnecessary.

F. Date Chimeric Antibodies Became Known

In its September 12 Order, the court concluded that there was substantial evidence in the record to support a finding that chimeric antibodies were known in February 1984 but not enabled by the 1984 application. (September 12 Order, at 3-4.) Chiron argues that this conclusion is flawed because no scientific article on chimeric antibodies had been published in February of 1984. Chiron cites no legal authority for the proposition that something cannot

be known to a person of ordinary skill in the art unless it is published in the literature. Rather, the law is that what is known to a person of ordinary skill in the art includes basic knowledge of the particular art, as well as the knowledge to search out information. *See In re Howarth,* 654 F.2d 103 (C.C.P.A. 1981). Thus, pertinent evidence of what is known to a person of ordinary skill in the art is not necessarily limited to printed publications, but may also include public records concerning U.S. patents, well known textbooks in English, and foreign publications, as well as expert testimony. *See id.*; *In re Lange,* 644 F.2d 856, 863 (C.C.P.A. 1981) (discussing relevance of expert testimony to establish knowledge possessed by those skilled in the art). The jury was instructed accordingly. (*See* Jury Instruction No. 25); *see also Newell Co., Inc. v. Kenny Mfg. Co.,* 864 F.2d 757, 784 (Fed. Cir. 1988) (knowledge of person of ordinary skill is a fact question for the jury) .

At trial, Genentech elicited testimony from Drs. French, Harris, and Lanier that it is common for scientists to discuss their work with others in the field before publication. In addition, testimony from Drs. Lanier and Larrick established that people in the field knew of and were discussing chimeric antibodies before February 1984. This evidence is sufficient to support a finding by clear and convincing evidence that chimeric antibodies were known to persons of ordinary skill in the art as early as 1984.

For the reasons discussed in the September 12 Order, there was also ample evidence in the record to suggest that none of the parent applications enabled chimeric antibodies, including (1) the testimony of Drs. French, Unkeless, Harris, Ring, and Larrick, (2) the fact that

Chiron felt it necessary to provide a lengthy description of chimeric techniques in the '561 patent, and (3) a 1989 article by the scientist who pioneered chimeric antibodies describing chimeric techniques as "obviously those of a very young and ambitious field . . . we are all new to the game." *See Genentech v. Novo Nordisk,* 108 F.3d 1361 (Fed. Cir. 1997) ("Where . . . the claimed invention is the application of an unpredictable technology in the early stages of development, an enabling description in the specification must provide those skill in the art with a specific and useful teaching"); (*See* September 12 Order, at 3-4.)[2]

The court therefore finds that Chiron is not entitled to judgment as a matter of law.

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[2] Chiron argues that the evidence proffered by Genentech has no weight because it did not relate to what a person of ordinary skill in the *relevant* field would have known. The court has already ruled on the sufficiency of Genentech's evidence regarding the characteristics of a person of ordinary skill in the art, and has rejected Chiron's position. (*See* September 12 Order at 2.) Chiron also argues that testimony by Drs. French and Unkeless that making chimeric antibodies was difficult is too speculative and conclusory to be clear and convincing. Ironically, Chiron cites a Federal Circuit case holding that an expert's failure to produce an antibody was not probative of lack of enablement because the expert failed to follow the teachings in the patent. *Johns Hopkins Univ. v. CellPro, Inc.,* 152 F.3d 1342, 1360 (Fed. Cir. 1998). The 1984-1986 applications, however, contained no teaching whatsoever as to how to make a chimeric antibody. Even if Drs. French and Unkeless had attempted to make a chimeric antibody themselves, they would have received no guidance at all from the parent applications. As the jury was instructed, a relevant factor to consider is the degree of guidance given in the specification. *In re Wands,* 858 F.2d 731 (Fed. Cir. 1988); (Jury Instruction No. 23). Drs. French and Unkeless were competent to testify as to what they understood people of ordinary skill in the art to be capable of in 1984-1986.

II. Motion For New Trial

The court may grant a new trial if (1) the court gave erroneous or inadequate jury instructions; (2) the court made erroneous and substantially prejudicial evidentiary rulings; (3) the verdict is contrary to the clear weight of the evidence, or (4) "to prevent, in the sound discretion of the trial judge, a miscarriage of justice." *C.O. Hanson v. Shell Oil Co.,* 541 F.2d 1352, 1359 (9th Cir. 1976); *Murphy v. Long Beach,* 914 F.2d 183, 186 (9th Cir. 1990); *United States v. 99 Acres of Land,* 970 F.2d 651, 658 (9th Cir. 1992). Chiron argues that all of these circumstances are present here.

A. Jury Instructions

Chiron contends that the court's jury instructions were both erroneous and incomplete. Chiron simply rehashes the same arguments it made in objecting to the jury instructions proposed by Genentech and the court. The court received extensive briefing and heard lengthy argument on those issues, and has already taken Chiron's arguments into account. The opinions the court expressed on the record and in the memorandum regarding the jury instructions, filed August 26, 2002, sufficiently address most of the legal concerns raised by Chiron's motion, and there is no need to reiterate them here. (*See* Mem. Re: Jury Instructions; Trial Tr. at 1889-93 (discussing Instruction No. 15); 1909:16-1914:25, 1917:10-16 (discussing enablement instructions); 1493:4-1495:10, 1512:14-1515:19 (addressing *Cooper Cameron/ Gentry Gallery* instruction); 1894:9-1895:7 (explaining reason for "full scope" language in written description instruction); 421:14-422:25 (rejecting argument that the court would commit error or Chiron would be prejudiced

by instruction on definition of "monoclonal antibody" identical to definition in *Markman* Order); 1905:16-1909:15 (lengthy discussion about deference to PTO and presumption of validity); *see also* Mem. and Order Re: Priority, at 15 (addressing issues related to proposed enablement instructions Nos. 59, 60))

The only argument that may deserve some further elaboration by the court is Chiron's argument that the court should have instructed the jury that a deposit can comply with the enablement requirement. (*See* Chiron's Proposed Instruction No. 62.) The cases on which Chiron relies hold that a deposit *may,* in some circumstances, satisfy the enablement requirement. *See Enzo,* 296 F.3d at 1328. Chiron's proposed instruction was misleading, because it suggested that a deposit automatically satisfies the enablement requirement. Moreover, as long as the jury "fully understood the issues" from the jury instructions as a whole, a new trial is not warranted simply because the court in its discretion chose not to instruct on legal nuances. *Los Angeles Memorial Coliseum Comm'n v. Nat'l Football League,* 726 F.2d 1381, 1398 (9th Cir. 1984). In a patent case, the jury determines whether or not the enablement requirement was met based on the factors enumerated in *In re Wands,* 858 F.2d 731 (Fed. Cir. 1988), even when there has been a biological deposit. The jury was instructed about the *Wands* factors, and Chiron presented evidence and argument that the enablement requirement was met by the deposit of antibodies with the ATCC. (*See* Instruction No. 23; Trial Tr. at 1917:22-1922:6.) This was sufficient for the jury to understand the issues and apply the facts to the law. Moroever [sic], it is difficult to imagine how Chiron might have been prejudiced by the court's refusal to give the proposed

instruction. Genentech never argued or introduced evidence to suggest that it was not possible to make more monoclonal antibodies using the antibodies on deposit. Rather, Genentech argued that the parent applications did not enable chimeric or humanized antibodies. There was nothing either erroneous or prejudicial about the instructions given to the jury.

B. Evidentiary Rulings

"A new trial is only warranted on the basis of an incorrect evidentiary ruling if the ruling substantially prejudiced a party." *99 Acres of Land,* 970 F.2d at 658. Thus, Chiron has the dual burden of showing that (1) the court made an erroneous evidentiary ruling; and (2) the ruling caused it "substantial prejudice." *See Advanced Cardiovascular Sys. v. Medtronic, Inc.,* 265 F.3d 1294, 1308 (Fed. Cir. 2001) (applying Ninth Circuit law).

As with the jury instructions, the court received written briefs and heard oral argument on many of the evidentiary and legal issues Chiron seeks to relitigate in its motion for a new trial. The court's opinions on most of these issues have been fully expressed on the record and in written orders, and remain the same. (*See* Trial Tr. at 540:4-22 (explaining relevance of Herceptin evidence); Motions in Limine Tr. at 14:22-15:25 (explaining that evidence of Chiron's lack of a product is relevant to show lack of enablement); Mem. Re: Jury Instructions, at 12 (discussing relevance of immunological utility); Trial Tr. at 324:6-344:11, 345:11-346:6, 346:19-347:7 (explaining why Dr. French was allowed to testify); *Id.* at 1467:4-15, 1470-1489:18 (discussion regarding PTO Interference)).

The only evidentiary ruling that merits further discussion here is the court's decision to strike argument and evidence regarding the PTO's determination during the prosecution of Genentech's Drebin/Greene patent application that the '561 patent was entitled to a priority date of 1985. Midway through trial, a branch of the PTO known as the Board of Patent Appeals and Interferences ("BPAI") issued a Notice of Interference between the Drebin/Greene application and the '561 patent. The purpose of an interference proceeding, which is initiated when two persons claim that they invented the same invention, is to "determine priority and patentability" of the invention, i.e. to determine who is entitled to get intellectual property protection over the invention claimed. 35 U.S.C. § 6.

When the BPAI issues a Notice of Interference, it is required to specify, "[w]here a party is accorded the benefit of the filing date of an earlier application, the identity of the earlier application." 37 C.F.R. § 1.611(c)(5). The Notice in this case stated that the '561 patent has been accorded *no* benefit to an earlier application. (*See* Notice, at 4: "Accorded Benefit: None"). This directly impeached the evidence of the PTO's earlier office action stating that the '561 patent was entitled to the benefit of a 1985 filing date. At the very least, the Notice left the question of priority completely unresolved. *See Heymes v. Takaya,* 6 U.S.P.Q.2d 1448, 14 (BPAI 1988) (patent examiner's earlier statements during the prosecution of an application are not binding on the BPAI).

Chiron's arguments at this stage of the proceedings are disingenuous. The court gave Chiron the opportunity to move for a mistrial when the BPAI's decision came to light, and Chiron expressly declined that opportunity.

Chiron has not offered any persuasive arguments as to why the court should have handled the situation any differently. Chiron's arguments ignore the fact that the PTO was required to, and did, state the date of the earliest application it believed the '561 patent was entitled to rely on for priority. If the court had not stricken the evidence of the PTO's earlier decision, it would have been unfair not to allow Genentech to present evidence about the Notice of Interference and its significance. If Genentech had presented evidence about the Notice of Interference, more time would have been spent on an issue that was really peripheral to the case. As the court mentioned repeatedly during the trial, the real question for the jury to determine was not how much deference to give the PTO but whether the written description and enablement requirements were met. (*See* Trial Tr. at 1905:16-1909:15); *cf. SSIH Equip. S.A. v. United States Int'l Trade Comm'n,* 718 F.2d 3o5, 365 (Fed. Cir. 1988) ("[T]he presumption of validity . . . does not have independent evidentiary value"). The jury was equipped to decide those issues without considering what happened in the Drebin/Greene prosecution. A side trial on what deference to give the PTO's actions, particularly after the PTO apparently changed its position, would have be [sic] confusing, a waste of time, and ultimately irrelevant. *See* Fed. R. Evid. 401, 403.

Chiron's newly discovered evidence of another interference proceeding between the Drebin/Greene application and U.S. Patent No. 6,165,464 (the "Hudziak patent") does not compel a different conclusion.[3] After trial, Chiron learned of a notice declaring an interference between the

[3] This evidence is the subject of a currently pending motion for relief from judgment pursuant to Rule 60(b).

Drebin/Green application and the Hudziak patent. The notice stated that neither applicant was entitled to the benefit of an earlier application, even though as a matter of law the applicants should have been accorded benefit automatically. Chiron argues that this evidence demonstrates that the PTO as a rule does not make substantive determinations of priority when it issues notices of interference.

The fact that the PTO did not decide the priority issue on the merits in the Drebin/Greene/Hudziak interference, however, does not mean that it declined to consider the merits in the 'Drebin/Greene/'561 interference. The court can only speculate as to what the PTO's process was in determining that the '561 patent should be accorded no priority. The PTO may have decided the issue on the merits, it may have deferred the issue, or its decision-making may have been completely arbitrary. In the end, the PTO accorded no benefit to the '561 patent, which on its face contradicted the patent examiner's earlier determination. This was sufficient to raise the prospect that a substantial amount of time would be devoted to litigating the significance of the examiner's earlier priority ruling if that evidence were not stricken from the record. Indeed, the newly discovered evidence that Chiron believes is so critical to explain the relevance of the Notice of Interference proves the point that allowing any evidence regarding the PTO's earlier priority determination to remain before the jury would have resulted in countless additional hours of litigation regarding the PTO's interference practices.

The evidence received at trial was properly admitted, and Chiron was not prejudiced by its admission in any event. For example, Chiron claims that it was prejudiced by evidence and argument that Genentech had developed

Herceptin, while Chiron did not have a commercial product. However, the court specifically instructed the jury that evidence about the development of Herceptin should only be considered in relation to the written description and enablement requirements, and otherwise was not relevant. (Tr. 446:18-448:3; *see also* 842:5-12 ("Everybody knows that Herceptin is a product that's on the market. It's not relevant in this phase of the trial.")) The court's admonitions were sufficient to cure any prejudice Chiron may have suffered.

Similarly, Chiron was not prejudiced by Dr. French's testimony about the HAMA response, ADCC, and epitope binding, which Chiron contends was not disclosed in her expert report. As the court has explained, Chiron explored some of these subjects at Dr. French's deposition and was in a position to cross-examine her about deficiencies in her expert report at trial, which Chiron did. (*See* Trial Tr. at 346:19-347:6.) Moreover, Dr. French was one of many experts who testified at trial about these subjects. The testimony that supposedly went beyond her expert report did not tell the jury anything they did not hear from another witness, and therefore did not prejudice Chiron.

Nor can Chiron claim that it was prejudiced when the court struck evidence of the PTO's determination that the '561 patent was entitled to a 1985 priority date. By the time the court instructed the jury to disregard statements and evidence about the PTO's decision in the Drebin/Greene prosecution, the jury had sat through weeks of a difficult trial, had listened to many different experts testify about complex and technical subjects, and had seen numerous exhibits. It is not likely that the jury even remembered the portion of Chiron's opening statement to which the court referred. Moreover, having stated at the

hearing that he was not seeking a mistrial based on the court's decision, counsel for Chiron cannot now credibly claim that Chiron was so prejudiced by the court's determination that it must have a new trial.[4] The court's instruction, which told the jury to disregard one small piece of evidence the probative value of which had been significantly reduced (if not completely nullified) by the PTO's declaration of interference, did not cause Chiron any prejudice, let alone the "substantial" prejudice required before the court can grant a new trial.

C. Weight of the Evidence

When a motion for new trial is based on the insufficiency of the evidence, a "stringent standard" applies. *E.E.O.C. v. Pape Lift, Inc.*, 115 F.3d 676, 680 (9th Cir. 1997). "A motion will be granted on this ground only if the verdict is against the great weight of the evidence, or it is quite clear that the jury has reached a seriously erroneous result." *Id.* (internal quotations omitted).

Each invalidity theory presented to the jury was legally correct, and there was ample evidence in the record to support each theory. *See* section I *supra*; *see also* September 12 Order.[5] Chiron's evidence was called into

[4] It bears mentioning that Chiron introduced evidence and made its opening remarks knowing that the PTO could declare an interference at any time, and that the interference could moot its argument.

[5] While the standard for a motion for new trial is distinct from the standard for a motion for JMOL, the trial record is the same. The court therefore refers to its discussion of the motions for JMOL so that the evidentiary basis for the court's ruling on the motion for new trial is clear. The evidence in Genentech's favor is strong enough to survive both a motion for JMOL and the less lenient standard applied on a motion for new trial. The court's reference to its earlier rulings is not

(Continued on following page)

question by the testimony of Genentech's experts, as well as the plain language of the patent applications themselves. Moreover, Chiron's key expert witnesses were substantially impeached on cross examination. Not only did Dr. Lanier's testimony on cross examination tend to support Genentech's theory regarding when chimeric antibodies became known in the art, (*See* September 12 Order, at 3-4), it called his credibility into question generally. Dr. Harris, another Chiron expert who provided important testimony about chimeric antibodies and about the *Cooper Cameron/Gentry Gallery* theory, was also substantially impeached on cross examination by his deposition testimony. Thus, it would not have been against the weight of the evidence for the jury to conclude that Genentech's experts were more credible and to accept their opinions. In a case where many of the critical issues turned on the testimony of experts, these credibility problems significantly diminished the force of Chiron's evidence. The testimony of Genentech's experts, in addition to the prosecution history and the other evidence in the record, provided more than adequate support for each theory on which the jury could have returned a verdict. The verdict in favor of Genentech therefore was not against the "great weight" of the evidence. *Pape Lift,* 115 F.3d at 680.

D. Prejudicial Arguments

Chiron argues that certain comments made by Genentech's lawyer during closing argument were so prejudicial

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intended to import the standard for a motion for JMOL into the motion for new trial.

that Chiron is entitled to a new trial despite Chiron's failure to object during the closing argument or before judgment was entered. "Federal courts erect a 'high threshold' to claims of improper closing arguments in civil cases raised for the first time after trial." *Hemmings v. Tidyman's, Inc.*, 285 F.3d 1174, 1193 (9th Cir. 2002) (quoting *Kaiser Steel Corp. v. Frank Colluccio Constr. Co.*, 785 F.2d 656, 658 (9th Cir. 1986)). Absent a contemporaneous objection, the court may grant a new trial only if "the integrity or fundamental fairness of the proceedings . . . is called into serious question." *Bird v. Glacier Elec. Coop., Inc.*, 255 F.3d 1136, 1148 (9th Cir. 2001).

None of the comments identified by Chiron call into question the fundamental fairness of the trial. Chiron first argues that Genentech sought to inflame the jury by stating that murine antibodies are different from chimeric antibodies because they "can kill somebody." (Trial Tr. at 2256:24-2257:4.) This statement, though somewhat blunt, was by no means an inaccurate summation of the evidence. A number of expert witnesses, including Chiron's own experts, testified that murine antibodies can evoke a severe immune response, making people seriously ill.

Similarly, it was not fundamentally unfair for Genentech to refer to the fact that it had invested in developing a commercial, FDA approved product while Chiron did not. This evidence was properly before the jury to show lack of enablement, and had come in subject to the court's limiting instruction to that effect. (*See* Trial Tr. at 446:18-448:3; 842:5-12.).

Chiron also claims that Genentech made "generalized attacks" on the competence of the PTO in violation of the court's *in limine* ruling. Genentech did not suggest that

the PTO was generally overworked, understaffed or poorly trained. Rather, Genentech commented on the prosecution of the '561 patent itself. Just as Chiron was entitled to, and did, argue that the PTO made the correct decision in issuing the '561 patent, so Genentech was entitled to argue that it made a mistake. There was nothing improper or fundamentally unfair about Genentech's arguments to that effect.

Finally, Chiron objects to two comments Genentech's lawyer made during closing argument suggesting that if Genentech had to pay damages to Chiron, the cost of Herceptin to breast cancer patients might increase.[6] While these comments were improper, their potential prejudicial impact was significantly reduced during voir dire, during which Chiron's counsel asked the jury if they were prepared to award damages of $300 million to Chiron, and both parties questioned the jury about their feelings on the cost of drugs.

The cases on which Chiron relies involved far more egregious misconduct. *See Whitehead v. Food Max of Miss., Inc.*, 163 F.3d 265, 278 (5th Cir. 1998) (finding fair trial impossible after counsel repeatedly sought to evoke local bias against a national corporation, improperly suggested jurors should put themselves in place of victims, stated that victims could not attend trial because it was too emotionally painful, and speculated that one victim would

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[6] *See* Trial Tr. at 1945:4-10 ("[I]f Genentech proves its case as required, then we go about our business freely selling Herceptin to women with breast cancer without Chiron's hand in our pocket. And, as you already know, they want a lot of money as a result. . . . "); *id.* at 2263:20-25 ("I think, in part, what you mostly learned, is why drugs cost so much and what people do.")

think about rape on her wedding day and on the day of her death because of the defendants' negligence); *Anheuser-Busch, Inc. v. Natural Beverage Distribs.*, 69 F.3d 337, 345-47 (9th Cir. 1995) (new trial warranted because of unsubstantiated and irrelevant allegations of sexist and racist behavior and counsel's repeated attempts to call the jury's attention to evidence, some of which was false, in violation of the district court's *in limine* rulings); *cf Union Carbide Chems. & Plastics Tech. Corp. v. Shell Oil Co.*, 2002 U.S. App. LEXIS 19647, No. 02-1001 at *36-40 (Fed. Cir. Sept. 20, 2002) (holding it was *not* abuse of discretion for district court to deny a motion for new trial on the issue of infringement despite the fact that numerous improper remarks were made during the trial, because attorney's improprieties were unlikely to have affected the infringement verdict).

The remarks of Genentech's attorney cannot be condoned, but then again neither can the remarks of Chiron's attorney in which she improperly attempted to personally vouch for a key witness. (*See* Trial Tr. at 2119:18-23.) They are the kinds of things that can happen with even the best of attorneys in the heat of the adversary process. In the context of the entire closing arguments and the trial taken as a whole, the remarks of Genentech's counsel about the cost of breast cancer treatment did not call into "serious question" the fundamental fairness of the trial. *Bird,* 255 F.3d at 1148. Genentech did not engage in the kind of grave or pervasive misconduct that would warrant a new trial.

IT IS THEREFORE ORDERED that Chiron's motion for judgment as a matter of law or in the alternative for a new trial be, and the same hereby is, DENIED.

DATED: October 22, 2002

/s/ William B. Shubb
WILLIAM B. SHUBB
UNITED STATES DISTRICT
JUDGE

APPENDIX C

UNITED STATES DISTRICT COURT

EASTERN DISTRICT OF CALIFORNIA

CHIRON CORPORATION,

Plaintiff,

v.

GENENTECH, INC.,

Defendant.

NO. CIV. S-00-1252 WBS GGH

MEMORANDUM AND ORDER RE: RULE 50 MOTIONS

(Filed Sep. 12, 2002)

At the close of Genentech's case in chief, Chiron filed a motion for judgment as a matter of law under Federal Rule of Civil Procedure 50(a). Pursuant to Rule 50(b), the court submitted the case to the jury subject to the court's later deciding the legal questions raised by Chiron's motion. The jury returned a verdict in favor of Genentech, and the clerk entered judgment on the verdict. The court now addresses the legal questions raised by Chiron's motion.[1]

I. Discussion

Judgment as a matter of law is appropriate when the evidence presented at trial permits only one reasonable conclusion. *Santos v. Gates*, 287 F.3d 846, 851 (9th Cir.

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[1] Genentech also filed motions for judgment as a mater of law. Because the jury returned a verdict in Genentech's favor, Genentech's motions are moot and are therefore denied.

2002)[2]. The court must draw all reasonable inferences in favor of the non-moving party, and "[i]f conflicting inferences may be drawn from the facts," then the court must deny the motion. *Rutherford v. City of Berkeley*, 780 F.2d 1444, 1448 (9th Cir.1986)).

A. Level of Ordinary Skill in the Art

Chiron first argues that Genentech failed to prove the characteristics of a person of ordinary skill in the art. However, Dr. French testified regarding her opinion as to the level of skill in the art. Although another Genentech expert, Dr. Unkeless, contradicted part of Dr. French's testimony, the jury could have reasonably adopted Dr. French's view. Moreover, the ultimate question for the jury to decide – whether claims 1-25 of the '561 were enabled or described by the 1984, 1985, or 1986 applications – did not necessarily depend on the jury agreeing with Dr. French. Even if the jury adopted the opinions of Chiron's experts on the subject of the qualifications of a person of ordinary skill in the art, the jury could still have found in Genentech's favor based on the evidence adduced at trial.

B. Expert Testimony on Ultimate Issues

Chiron next argues that it must prevail as a matter of law because Genentech did not elicit any expert testimony

[2] Ninth Circuit law, not Federal Circuit law, controls procedural issues in patent cases. *See Midwest Indus. Inc. v. Karavan Trailers, Inc.*, 175 F.3d 1356, 1359 (Fed. Cir. 1999) (en banc). The legal standard for a Rule 50 motion is a procedural issue. *See Shockley v. Arcan, Inc.*, 248 F.3d 1349, 1353 (Fed. Cir. 2001).

regarding the ultimate issues in the case. After reviewing the authorities cited by the parties, and considering the additional briefing they submitted on this subject, the court finds that expert testimony tying the evidence to the claims of the patent is not required as a matter of law. The jury in this case had sufficient evidence, including testimony from Genentech's experts, to be able to apply the facts to the law and render a verdict in Genentech's favor.

C. Enablement Requirement

The jury also had sufficient evidence from which to conclude that the enablement requirement was not met by the parent applications. Chiron contends that the chimeric and humanized nature of the antibody is an unclaimed feature that does not need to be enabled by the parent applications. The court has twice rejected this argument. (*See* Mem. Re: Jury Instructions, at 14; Mem. and Order Re: Priority, at 15-17.) If chimeric or humanized antibodies were known at the time the parent applications were filed, they had to be enabled by those applications.

There is substantial evidence to suggest that chimeric antibodies were known at the time the parent applications were filed, but not enabled by those applications. Chiron's expert, Dr. Lanier, testified at trial that chimeric antibodies were not known until after the 1984 application was filed, but he was substantially impeached on cross examination by his deposition testimony, in which he stated that people in the field became familiar with chimeric techniques prior to the 1984 application.[3] The experts were in

[3] The court refused to allow Genentech to call Dr. Lanier during Genentech's case in chief, but agreed to reserve ruling on any Rule 50

(Continued on following page)

agreement that making chimeric antibodies was not routine in 1984, and it is undisputed that the 1984 application provided no guidance at all as to how a chimeric antibody could be made. *See Hybritech v. Monclonal Antibodies*, 802 F.2d 1367, 1384 (Fed. Cir. 1986) (holding that a patent need not teach what is well known in the art.) The evidence of lack of enablement was even stronger with respect to the 1985 and 1986 applications. The experts agreed that chimeric antibodies were known by the time the 1985 and 1986 application was filed, and both Dr. French and Dr. Unkeless testified that making such antibodies was not routine at that time. Dr. Ring and Dr. Larrick's testimony further supports the conclusion that it would have been difficult to make a chimeric antibody during this time period. In addition, the fact that a lengthy discussion of how to make a chimeric antibody was included in the '561 patent raises an inference that as late as 1999, when the amendments to the 1995 application that became the '561 patent were filed, Chiron's patent attorneys felt that making chimerics was not so routine that to omit such information would enable the claims. The evidence is therefore sufficient to support a finding that any one of the parent applications failed to meet the enablement requirement.

D. Written Description Requirement

1. Representative Number of Species

Chiron contends that Genentech presented no evidence to suggest that the parent applications did not

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motion brought by Chiron until Genentech had an opportunity to examine Dr. Lanier.

describe a representative number of species. As just discussed, there was sufficient evidence for a jury to conclude that at least chimeric antibodies were known during the 1984-1986 time period. In addition, Dr. French opined that the antibodies described in the parent applications are not representative of chimeric antibodies or antibodies that bind to other epitopes on the HER2 antigen. She explained that in contrast to chimerics and other anti-HER2 antibodies, the antibodies described in the parent applications generate more of a HAMA response and are not therapeutically effective absent conjugation to a toxin. Contrary to Chiron's assertions, this testimony is relevant to the common, necessary features of the claimed monoclonal antibodies – namely that they must "bind" in an *immunologically significant* way to HER2. (*See* Markman Order, at 38-42.)

2. Relevant Identifying Characteristics

Chiron also contends that Genentech has failed to prove that the parent applications do not disclose sufficiently detailed, relevant identifying characteristics shared by the members of the genus. The Federal Circuit has found that a genus of monoclonal antibodies is adequately described if the antigen to which the antibodies bind is well-characterized. *Enzo Biochem, Inc. v. Gen-Probe, Inc.*, No. 01-1230, 2002 U.S. App. LEXIS 14328 (Fed. Cir. July 15, 2002). Dr. Unkeless testified that the antigen described in the 1985 and 1986 applications was not well-characterized, and it is undisputed that the 1984 application does not expressly mention the antigen to which the claimed antibodies bind. Dr. French also testified to this effect. The jury could have reasonably concluded from this evidence that the written description requirement was not met.

3. Cooper Cameron/Gentry Gallery

Even if there were no evidence to support any of the above theories, there was substantial evidence in the record from which the jury could have concluded that the parent applications were limited to antibodies having certain cytotoxic properties and thus could not support the broad claims of the '561 patent. *See Cooper Cameron Corp. v. Kvaerner Oilfields Prods.*, 291 F.3d 1317, 1323 (Fed. Cir. 2002) ("A broad claim is invalid when the entirety of the specification clearly indicates that the invention is of a much narrower scope.") The parent applications themselves are evidence that the invention was limited to antibodies having a TCID 50% and an IgG or IgM isotype. (Trial Exhibits 2, 3, 4) (among other things, describing the TCID 50% limitation and isotypes as the "important characteristics" and "principal aspect[s]" of the invention.) In addition, the expert testimony of Dr. French, Dr. Harris, Dr. Bjorge, and Dr. Unkeless provides ample support for the conclusion that a person skilled in the art would have understood the parent applications to be limited to monoclonal antibodies having the stated cytotoxic properties and isotypes. The statements Dr. Ring made in affidavits to the PTO and while being examined by counsel for Genentech also support this theory. Thus, the evidence permits a conclusion that none of the parent applications met the written description requirement.

4. Original Claims

Chiron contends that the original claims in the 1984, 1985, and 1986 applications satisfy the written description requirement as a matter of law. Chiron's assertion that original claims automatically satisfy the written description requirement is legally incorrect. In *Enzo*, the Federal

Circuit held that the written description requirement *can be, but is not necessarily*, satisfied by original claims. *Enzo*, 2002 U.S. App. LEXIS 14328, at *27-28. *Enzo* accordingly forecloses the argument that Chiron makes here.

5. Separate Written Description Requirement

Enzo also dispenses with Chiron's argument that, as a matter of law, there is no statutory written description requirement under section 112. *Enzo* specifically analyzed the written description requirement as a separate requirement of section 112.

E. Claims 2-8, 9-18, and 19-25

Finally, Chiron argues that Genentech was required to present evidence regarding the validity of each of the disputed twenty-five claims of the '561 patent. For the reasons discussed in this court's order regarding the final jury instructions, the independent claims stand or fall based on the dependent claims. (*See* Mem. Re: Jury Instructions, at 1-5.) Therefore, there was no need for Genentech's experts to walk the jury through each dependent claim of the patent and opine as to whether that claim was valid.

Moreover, because the court construed claims 1, 9, and 19 to describe monoclonal antibodies that bind to the HER2 antigen, the independent claims are essentially equivalent in scope. Thus, Genentech's evidence regarding claim 1 was equally relevant to the validity of claims 9 and 19. The fact that Genentech failed to elicit testimony and present evidence regarding each claim separately does not warrant judgment in Chiron's favor.

IT IS THEREFORE ORDERED that Chiron's motion for judgment as a matter of law under Rule 50 be, and the same hereby is, DENIED.

DATED: September 11, 2002

/s/ William B. Shubb
WILLIAM B. SHUBB
UNITED STATES
DISTRICT JUDGE

APPENDIX D

UNITED STATES DISTRICT COURT

EASTERN DISTRICT OF CALIFORNIA

CHIRON CORPORATION,

Plaintiff,

v.

GENENTECH, INC.,

Defendant.

NO. CIV. S-00-1252 WBS GGH

MEMORANDUM AND ORDER RE: INFRINGEMENT

(Filed June 25, 2002)

This lawsuit concerns Chiron's United States Patent No. 6,054,561 ("'561 patent"), a patent for monoclonal antibodies that bind to a human breast cancer antigen known as HER2. Chiron moves for summary judgment on the question of whether Genentech's product, Herceptin, infringes the '561 patent. Genentech opposes Chiron's motion on the sole ground that Herceptin is not a "monoclonal antibody" as the court has defined the term.

I. Factual and Procedural Background

A. The '561 Patent

In general, the '561 patent claims monoclonal antibodies capable of binding to a human breast cancer antigen known as HER2. The science of monoclonal antibodies is discussed at length in this court's *Markman* order of April 22, 2002. Briefly, antibodies target and attach to foreign substances in the body known as antigens. Monoclonal

antibodies are homogeneous preparations of essentially identical antibodies, all of which recognize and bind to the same antigen.

In the early 1980s, scientists at Cetus, Chiron's predecessor, began a project to produce monoclonal antibodies capable of recognizing and binding to human breast cancer antigens but not to normal tissue. After testing thousands of monoclonal antibodies, Cetus scientists isolated several that bound to an antigen that occurred with great frequency in breast cancers, but with little frequency in normal tissue. That antigen, known today as "HER2" (Human Epidermal growth factor Receptor 2), is referred to in the '561 patent as "c-erbB-2."

In 1984, Cetus filed the first in a long line of patent applications that ultimately resulted in the issuance in April of 2000 of the '561 patent. The '561 patent consists of thirty-one separate claims, the first twenty-five of which are at issue in this lawsuit.

The claims of the '561 patent fall within four broad categories. In the first category are three independent claims, claims 1, 9, and 19, which recite monoclonal antibodies that bind to a particular breast cancer antigen. Specifically, claim 1 is directed toward "[a] monoclonal antibody that binds to a human breast cancer antigen that is also bound by monoclonal antibody 454 C11. . . . "; claim 9 claims "[a] monoclonal antibody that binds to a human breast cancer antigen that is also bound by monoclonal antibody 520 C9. . . . "; and claim 19 claims "[a] monoclonal antibody that binds to human c-erbB-2 antigen." The patent equates the antigen bound by 454 C11 with the antigen bound by 520 C9 and c-erbB-2. ('561 patent, at

27:1-17; Claim 8, 16, 18). For ease of reference, the court will refer to these claims as the "independent claims."

The second category of claims are dependent claims which incorporate every limitation of the independent claims, but also require that the monoclonal antibodies of the independent claims exhibit certain staining activity in an immunoassay. ('561 Patent, claims 2, 4, 7, 10-12, 20, 22, 25). Claims 2 and 4 are representative. Claim 2 is directed toward the monoclonal antibody of claim 1, where the monoclonal antibody exhibits strong staining on three or less identified normal tissues in an immunoassay.[1] Claim 4 requires strong staining on one or less of the enumerated normal tissues. The court will refer to these claims as the "staining claims."

The third category of claims are dependent claims directed toward the monoclonal antibodies that bind to the extracellular domain of the referenced human breast cancer antigen. Claims 3, 7, 11, 15, 21, 25 are referred to herein as the "extracellular domain claims."

The fourth and final category of claims in the patent, consisting of claims 5, 6, 13, 14, 23, and 24, are dependent claims that require binding to a human breast cancer cell line. These claims are referred to herein as the "cell line claims." The court held a *Markman* hearing, and issued an order on April 22, 2002 construing a number of the terms in the above claims.

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[1] Claim 2 reads: "The monoclonal antibody of claim 1, wherein the monoclonal antibody exhibits strong staining intensity as determined in an immunoassay with three or less of the normal tissues and blood cells selected from the group consisting of pancreas, esophagus, lung, kidney, colon, stomach, brain, tonsil, liver, heart, ovary, skin, breast, platelets, red cells, lymphocytes, monocytes and granulocytes."

B. Herceptin

The accused product, Herceptin, is a drug used in the treatment of breast cancer. Herceptin is the product of years of research and development by Genentech scientists that began in the mid 1980s. (Slikowsky Decl. Ex. A at 2.) Like scientists at Cetus, scientists at Genentech were interested in identifying antibodies capable of binding to human breast cancer for the purpose of developing a breast cancer drug. In the late 1980s, they discovered a murine (mouse) monoclonal antibody named "4D5." (*Id.* at 3.) In addition to binding strongly to HER2, 4D5 stops or reduces the growth of breast tumors that overexpress HER2. (*Id.*) This "antiproliferative effect" results from the binding of 4D5 to the HER2 antigen. (*Id.*)

After it identified 4D5, Genentech sought to "humanize" the murine antibody. Genentech scientists identified portions of 4D5's amino acid sequence and used those as a "blueprint" for creating a synthetic amino acid chain that had the binding properties of 4D5. This chain was combined with chains of amino acids modeled after human antibodies to create a "humanized" antibody. (*Id.* at 4.)

Humanization was an important step in producing antibodies that could be used as effective therapeutics against breast cancer. Repeated doses of antibodies derived from animal sources provoked an adverse immune response in some human patients, as their bodies rejected the presence of non-human elements. Humanized antibodies, however, reduced the potential for this response by surrounding animal-derived binding sites with human DNA. (*Id.*) Genentech succeeded in humanizing 4D5 in 1992. (Crotty Decl. Ex. 7, 1992 Carter article). The humanized antibody was called "HuMAb4d5-8," short for "Humanized Monoclonal Antibody 4D5-variant 8."

A variant of HuMAb4d5-8 known as "trastuzumab" is the active ingredient in Herceptin. (Sliwkowski Dep. at 39; Crotty Decl. Ex. 3, Herceptin® Product Insert.) Trastuzumab is produced by "transfecting," or introducing, heavy and light chains of the HuMAb4d5-8 antibody into a Chinese Hamster Ovary cell. ("CHO cell"). (Sliwkowsky Decl. Ex. A at 5.) CHO cells do not produce antibodies naturally; however, once transfected with HuMAb4d5-8, they produce additional HuMAb4d5 antibodies, as well as molecular variants of HuMAb4d5-8. (Harris Decl. ¶ 5.)

The HuMab4d5-8 variants include molecules with different "glycosylation" structures, which essentially are sugars attached to the amino acid chain of the antibody. (*Id.* ¶ 14.) They also include molecules with slightly different amino acid structures, which can result from partial "deamidation" (change in amino-acids) or partial "isomerization" (conversion into a different structural arrangement) at particular positions in the amino acid chain. (*Id.* ¶¶ 9-13.) These amino acid variants constitute approximately 26% of the overall antibody composition of Herceptin. (*Id.* ¶ 9.) Each of these variants have between 99.8% and 99.9% homology, or similarity in amino acid sequence, with HuMab4d5-8. (*Id.* Ex. A at 243.) According to a paper published by Genentech scientists, the variants in the antibody population of Herceptin do not have a significant effect on Herceptin's potency. (*Id.* Ex. A at 243.)

In 1998, after several years of clinical trials, the FDA approved Herceptin to treat certain forms of breast cancer. (*Id.* Ex. 8, FDA Approval Letter). Genentech has made, sold, and offered to sell Herceptin in the United States since that time. (Crotty Decl. Ex. 10.)

II. Discussion

The court must grant summary judgment to a moving party "if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(c). The party adverse to a motion for summary judgment may not simply deny generally the pleadings of the movant; the adverse party must designate "specific facts showing that there is a genuine issue for trial." Fed. R. Civ. P. 56(e); *see Celotex Corp. v. Catrett*, 477 U.S. 317 (1986). Simply put, "a summary judgment motion cannot be defeated by relying solely on conclusory allegations unsupported by factual data." *Taylor v. List*, 880 F.2d 1040, 1045 (9th Cir. 1989). The non-moving party must show more than a mere "metaphysical doubt" as to the material facts. *Matsushita Elec. Indus. Co. v. Zenith Radio*, 475 U.S. 574, 587 (1986).

According to section 271(a) of the Patent Act, "whoever without authority makes, uses, offers to sell or sells any patented invention within the United States ... infringes the patent." 35 U.S.C. § 271(a). Determining whether a patent is infringed requires a two step analysis. First, the court must construe the disputed terms of the patent. *See Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). Second, the court must compare the properly construed claims to the accused product. *Id.* at 976. A product literally infringes the patent if each and every limitation of the properly interpreted claim is found in the accused product. *See Transmatic, Inc. v. Gulton Indus., Inc.*, 53 F.3d 1270, 1277 (Fed. Cir. 1995).

The court has already construed the terms of the patent, and Genentech admits to making, offering to sell, and selling Herceptin in the United States. Thus, the only issue for the court to decide is whether Herceptin contains all of the limitations of the claims as construed by the court. Whether Herceptin infringes the '561 patent is a question of fact. *Rheox, Inc. v. Entact, Inc.*, 276 F.3d 1319, 1324 (Fed. Cir. 2002).

One limitation that appears in all of the claims in the '561 patent is that the antibody must be a "monoclonal antibody." The court has construed the term "monoclonal antibody" to mean:

> An antibody composition having *a homogeneous (essentially identical) antibody population.* The term is not limited regarding the species or source of the antibody, nor is it limited by the manner in which it is made. For example, the term includes monoclonal antibodies produced by a methodology other than hybridoma which results in monoclonal antibodies no matter how subcategorized, e.g., hybrid, altered, chimeric, or humanized. *The term includes variants that naturally arise during the production of monoclonal antibodies.* The term includes whole immunoglobulins.

(April 22, 2002 Order, at 38) (emphasis added). Genentech argues that Herceptin does not infringe any of the claims in the '561 patent because Herceptin does not have a homogenous antibody population.[2]

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[2] Chiron contends that Genentech should be precluded from raising the argument that Herceptin is non-homogenous and therefore does not infringe the '561 patent, because Genentech failed to identify this

(Continued on following page)

It is undisputed that approximately 26% of Herceptin's antibody composition has a different amino acid structure from HuMAb4d5-8, and that some of the antibodies within the population are also glycosylated. However, the definition of monoclonal antibody allows for "variants that naturally arise during the production of monoclonal antibodies," as long as the antibodies in the resulting preparation are "essentially identical." If the variants in Herceptin's antibody population arise naturally during Herceptin's production and are essentially identical, then Herceptin infringes the patent.

Genentech argues that because CHO cells do not naturally produce antibodies, any variants that arise from a population of antibodies produced by a transfected, or as Genentech puts it, "genetically manipulated," CHO cell are not "natural." This argument is inconsistent with both the patent and the understanding of those skilled in the art.

The patent explains that some variants will arise during the production of monoclonal antibodies, and includes these within the definition of "monoclonal antibody":

> Antibodies are normally synthesized by lymphoid cells derived from B lymphocytes of bone marrow. Lymphocytes derived from the same clone produce immunoglobulin of a single amino acid sequence. Lymphocytes cannot be directly

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theory in its responses to Chiron's interrogatories. *See* Fed. R. Civ. Proc. 26(e), 37(c)(1). Chiron, however, has not shown or even alleged any prejudice resulting from Genentech's purported failure to supplement its interrogatory responses. The court refuses to preclude a substantive defense on a mere technicality.

> cultured over long periods of time to produce substantial amounts of their specific antibody. However, Kohler et al (1975) *Nature* 256: 496-497, demonstrated that a process of somatic cell fusion, specifically between a lymphocyte and a myeloma cell, could yield hybrid cells which grow in culture and produce a specific antibody called a "monoclonal antibody". . . . The resulting hybrid cell was called a "hybridoma." A monoclonal antibody belongs to a group of antibodies whose population is substantially homogeneous, i.e. the individual molecules of the antibody population are identical except for *naturally occurring mutations*.

('561 Patent at 1:39-54) (emphasis added). Genentech interprets this language to mean that "the 'mutations' or variants contemplated [by the patent] are those that arise from cells such as lymphocytes of bone marrow that naturally produce antibodies." (Genentech Opp'n at 3.) However, nothing in the language cited by Genentech suggests that it is the lymphcyte cells that must produce these mutations. In fact, the expert testimony in the record suggests that the variations referred to occur because the monoclonal antibodies are produced in a host cell, i.e. something *other* than a lymphocyte, such as a hybridoma. (Mar. 6, 2002 *Markman* Tr. at 34 (testimony of Dr. Lanier that "if you produce antibodies in different host cells, they may suddenly change the sugar attached to the antibody," resulting in a "naturally occurring mutation."))

At the *Markman* hearing, Chiron's expert Dr. Lanier was asked about what he understood the patent to mean by "naturally occurring mutations." He testified that the term meant small, minor variations in antibody composition, and that glycosylation, deamidation and isomerization would

all be examples of naturally occurring mutations. (*Id.* at 34-35.) He also testified that each of these types of naturally occurring mutations were known to occur in 1984, when the first patent application leading to the '561 patent was filed. (*Id.* at 35; *see also* Lanier Reply Decl. ¶¶ 8-10.) Glycosylated variants, and variants resulting from deamidation and isomerization are the variants of HuMAb4d5-8 in Herceptin. Given the plain language of the patent, the court's claim construction, and Dr. Lanier's expert testimony, Genentech's argument that the variants in Herceptin do not arise naturally from its production rings hollow.

Moreover, the logic of Genentech's argument dictates that no one could ever make a homogeneous preparation of antibodies having "natural" variants from a hybridoma, which is inconsistent with the way this court has defined a monoclonal antibody. Hybridomas do not exist in nature – they are produced in the laboratory by fusing a myeloma with a lymphocyte. Like a CHO cell, a myeloma will not produce antibodies unless it is "manipulated." Variants that are produced from a hybridoma are therefore no more "natural" by Genentech's definition than variants produced by CHO cells. Similarly, because humanized monoclonal antibodies do not occur in nature, any variants that would arise from trying to make a humanized monoclonal antibody would not be "natural" according to Genentech's interpretation. This court, however, has already found that the term "monoclonal antibody" encompasses both humanized antibodies and hybridoma-derived antibodies.

Genentech has also failed to present any evidence that the variants in Herceptin are not "essentially identical" to

HuMab4d5-8 and to each other so as to make Herceptin a non-homogeneous preparation.[3] To the contrary, it is undisputed that the variants are at least 99.8% homologous to trastuzumab, and have no significant impact on the purity or potency of Herceptin.

Finally, the testimony of experts for both Chiron and Genentech overwhelmingly confirms that Herceptin is a homogeneous preparation of antibodies. Genentech's expert, Dr. Deborah French, testified at her deposition that "Herceptin is a humanized antibody which as a product is a homogeneous population." (French Dep. at 59.) Dr. John Adair, another Genentech expert, similarly testified that trastuzumab is sold as a homogeneous preparation antibody in the drug Herceptin. (Adair Dep. at 195.) Dr. Jay Unkeless, also testifying on Genentech's behalf, confirmed that if Genentech made Herceptin in a recombinant cell line, it would be an antibody composition having a homogeneous population. (Unkeless Dep. at 120; *see also* Slikowsky Dep. at 45 (responding affirmatively when asked if Herceptin contains a "substantially pure population of antibodies"); Lanier Reply Decl. ¶ 12 (concluding that Herceptin is a homogeneous preparation of antibodies).) Significantly, neither of the experts upon whose testimony Genentech relies for purposes of opposing Chiron's motion, Drs. Sliwkowksy and Harris, have

[3] At oral argument, Genentech suggested that because not all of the antibodies in Herceptin are identical, there could be no literal infringement of the '561 patent. Genentech argued that the proper question for the court was therefore whether Herceptin infringes under the doctrine of equivalents. However, the claims themselves, as the court has construed them, do not require a completely identical population of antibodies. A product will literally infringe the patent if it is a preparation of "*essentially* identical" antibodies. (*See* April 22, 2002 Order, at 38) (emphasis added).

attested that Herception is *not* a homogeneous preparation of antibodies.

In light of the language of the patent, this court's claim construction, and the undisputed expert testimony in the record, no reasonable jury could conclude that Herceptin is a non-homogeneous antibody population. The undisputed facts clearly establish that Herceptin is a "monoclonal antibody" as this court has construed the term. It is further undisputed that Herceptin binds to the same antigen as 454 C11, 520 C9, and to c-erbB-2.[4] Therefore, Herceptin literally infringes all of the independent claims of the patent. Because Genentech does not dispute that Herceptin also meets all of the limitations in the dependent claims of the patent, Chiron is entitled to summary judgment that Herceptin infringes all of the claims of the '561 patent at issue in this case.

IT IS THEREFORE ORDERED that Chiron's Motion For Summary Judgment Re: Infringement be, and the same hereby is, GRANTED. The court determines as a matter of law that Genentech's product, Herceptin, infringes claims 1 through 25 of United States Patent No. 6,054,561.

DATED: June 24, 2002

/s/ William B. Shubb
WILLIAM B. SHUBB
UNITED STATES DISTRICT JUDGE

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[4] Genentech "does not advance a non-infringement position on th[e] basis" that Herceptin does not "bind" to HER2, and has come forward with no evidence to refute Chiron's evidence on this point. (Genentech Opp'n To Mot. S.J. Re: Infringement at 1 n.3.)

APPENDIX E

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

03-1158, -1159

CHIRON CORPORATION,

Plaintiff-Appellant,

v.

GENENTECH, INC.,

Defendant-Cross Appellant.

ORDER

(Filed Jun. 8, 2004)

A combined petition for panel rehearing and for rehearing en banc having been filed by the APPELLANT, and a response thereto having been invited by the court and filed by the CROSS-APPELLANT, and the petition for rehearing having been referred to the panel that heard the appeal, and thereafter the petition for rehearing en banc and response having been referred to the circuit judges who are in regular active service,

UPON CONSIDERATION THEREOF, it is

ORDERED that the petition for panel rehearing be, and the same hereby is, DENIED and it is further

ORDERED that the petition for rehearing en banc be, and the same hereby is, DENIED.

The mandate of the court will issue on June 15, 2004.

Circuit Judge DYK did not participate in the vote.

FOR THE COURT,

/s/ Jan Horbaly (AV)
Jan Horbaly
Clerk

Dated: June 8, 2004

cc: Harold J. McElhinny
Roy E. Hofer

Roberta L. Robins, Frank P. Porcelli

CHIRON CORP V GENENTECH, 03-1158, -1159
(DCT – 00-CV-1252)

Amicus curiae briefs were filed by Sangamo Biosciences, Inc., and the Patent Resources Group, Inc.

* *

* Note: Pursuant to Fed. Cir. R. 47.6, this order *
* is not citable as precedent. It is a public record. *

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APPENDIX F

The Constitution of the United States, Article I, Section 8, Clause 8 provides:

The Congress shall have Power * * * To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries[.]

The Patent Act of 1952, 35 U.S.C. § 1 *et seq.*, provides in part:

§ 101. Inventions patentable

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

* * * * *

§ 120. Benefit of earlier filing date in the United States

An application for patent for an invention disclosed in the manner provided by the first paragraph of section 112 of this title in an application previously filed in the United States, or as provided by section 363 of this title, which is filed by an inventor or inventors named in the previously filed application shall have the same effect, as to such invention, as though filed on the date of the prior application, if filed before the patenting or abandonment of or termination of proceedings on the first application or on an application similarly entitled to the benefit of the filing date of the first application and if it contains or is amended to contain a specific reference to the earlier filed application. No application shall be entitled to the benefit

of an earlier filed application under this section unless an amendment containing the specific reference to the earlier filed application is submitted at such time during the pendency of the application as required by the Director. The Director may consider the failure to submit such an amendment within that time period as a waiver of any benefit under this section. The Director may establish procedures, including the payment of a surcharge, to accept an unintentionally delayed submission of an amendment under this section.

* * * * *

§ 282. Presumption of validity; defenses

A patent shall be presumed valid. Each claim of a patent (whether in independent, dependent, or multiple dependent form) shall be presumed valid independently of the validity of other claims; dependent or multiple dependent claims shall be presumed valid even though dependent upon an invalid claim. Notwithstanding the preceding sentence, if a claim to a composition of matter is held invalid and that claim was the basis of a determination of nonobviousness under section 103(b)(1), the process shall no longer be considered nonobvious solely on the basis of section 103(b)(1). The burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting such invalidity.

The following shall be defenses in any action involving the validity or infringement of a patent and shall be pleaded:

(1) Noninfringement, absence of liability for infringement or unenforceability,

(2) Invalidity of the patent or any claim in suit on any ground specified in part II of this title as a condition for patentability,

(3) Invalidity of the patent or any claim in suit for failure to comply with any requirement of sections 112 or 251 of this title.

(4) Any other fact or act made a defense by this title.

In actions involving the validity or infringement of a patent the party asserting invalidity or noninfringement shall give notice in the pleadings or otherwise in writing to the adverse party at least thirty days before the trial, of the country, number, date, and name of the patentee of any patent, the title, date, and page numbers of any publication to be relied upon as anticipation of the patent in suit or, except in actions in the United States Claims Court, as showing the state of the art, and the name and address of any person who may be relied upon as the prior inventor or as having prior knowledge of or as having previously used or offered for sale the invention of the patent in suit. In the absence of such notice proof of the said matters may not be made at the trial except on such terms as the court requires. Invalidity of the extension of a patent term or any portion thereof under section 154(b) or 156 of this title because of the material failure –

(1) by the applicant for the extension, or

(2) by the Director,

to comply with the requirements of such section shall be a defense in any action involving the infringement of a patent during the period of the extension of its term and shall be pleaded. A due diligence determination under section 156(d)(2) is not subject to review in such an action.